Pioneer sound.vision.soul

Service Manual

BDP-05FD

ORDER NO.
RRV3753

Blu-ray Disc PLAYER

BDP-05FD
BDP-51FD

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	DVD Region No.	BD Region No.	Remarks
BDP-05FD	KU/CA	AC 120 V	1	A	
BDP-51FD	KU/CA	AC 120 V	1	A	

For details, refer to "Important Check Points for good servicing".

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains certain electrical parts contain chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

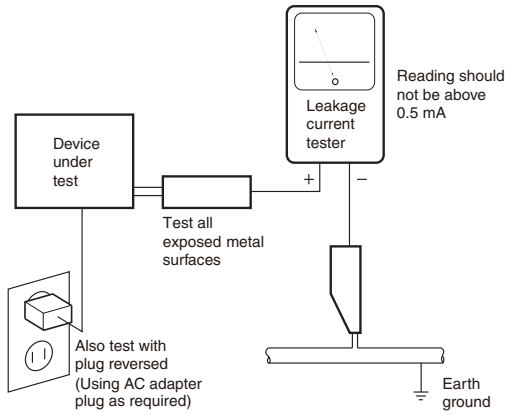
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.


Reading should not be above 0.5 mA
Leakage current tester
Device under test
+
–
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

WARNING !

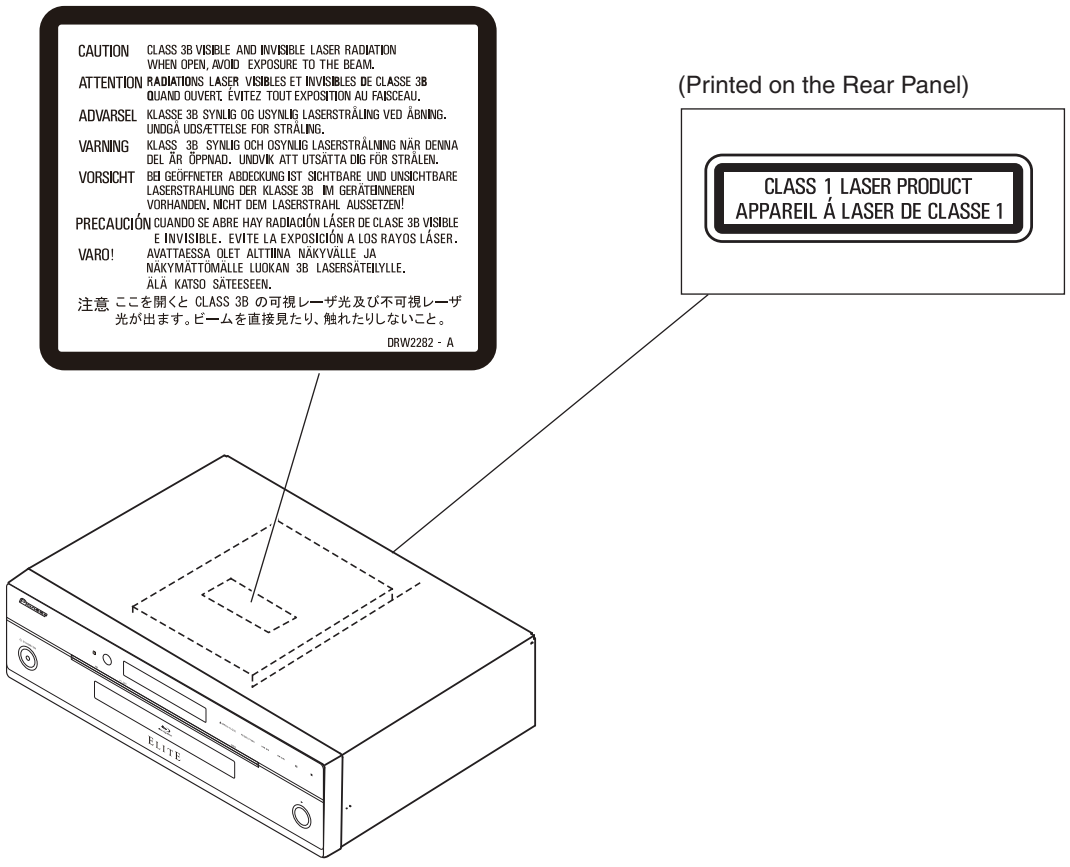
THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR **CLASS 1**.
A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

---Laser Pickup specifications and Laser characteristics---

For BD	Wave length : 405 nm Operating output : 0.95 mW CW, Class 1M Maximum output : Class 2 (under fault condition)
For DVD	Wave length : 660nm Operating output : 1.06 mW CW, Class 1M Maximum output : Class 2M (under fault condition)
For CD	Wave length : 785 nm Operating output : 1.34 mW CW, Class 1M Maximum output : Class 1M (under fault condition)

LABEL CHECK

The following caution label appears on your unit.
Location: inside of the unit


CAUTION CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO THE BEAM.
ATTENTION RADIATIONS LASER VISIBLES ET INVISIBLES DE CLASSE 3B QUAND OUVERT, ÉVITEZ TOUT EXPOSITION AU FAISCEAU.
ADVARSEL KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARNING KLASS 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. UNDVIK ATT UTSÄTTA DIG FÖR STRÅLEN.
VORSICHT BEI GEÖFFNETER ABDECKUNG IST SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG DER KLASSE 3B IM GERÄTEINNEREN VORHANDEN. NICHT DEM LASERSTRAHL AUSSETZEN!
PRECAUCIÓN CUANDO SE ABRE HAY RADIACIÓN LÁSER DE CLASE 3B VISIBLE E INVISIBLE. EVITE LA EXPOSICIÓN A LOS RAYOS LÁSER.
VARO! AVATTAESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LUOKAN 3B LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
注意 ここを開くと CLASS 3B の可視レーザ光及び不可視レーザ光が出ます。ビームを直接見たり、触れたりしないこと。
DRW2282 - A
(Printed on the Rear Panel)
CLASS 1 LASER PRODUCT
APPAREIL Á LASER DE CLASSE 1

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
  Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.

- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 ºC.
  Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 ºC in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

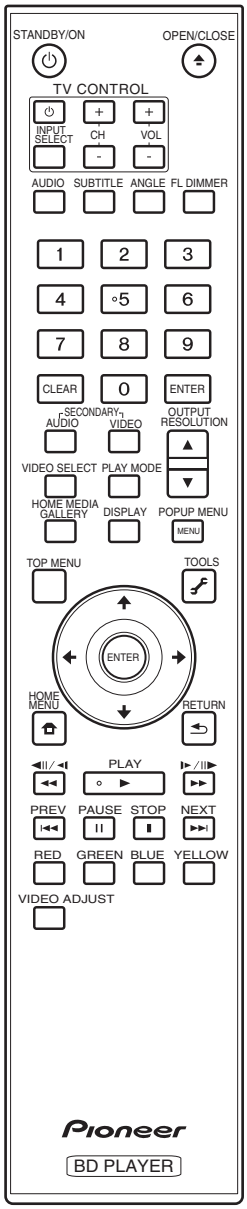
Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

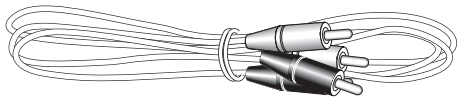
- Parts numbers of lead-free solder:
  GYP1006 1.0 in dia.
  GYP1007 0.6 in dia.
  GYP1008 0.3 in dia.

2. SPECIFICATIONS
2.1 ACCESSORIES

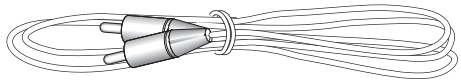
Remote Control
(BDP-05FD : VXX3313)
(BDP-51FD : VXX3333)



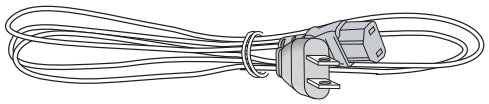
Audio cable (white/red) x 1
(VDE1064) L=1.5m



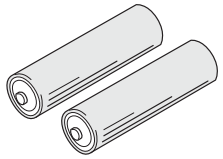
Video cable (yellow) x 1
(VDE1065) L=1.5m



Power cable x 1
(ADG7061)



AA/R6 dry cell batteries



Warranty Card

Operating Instructions
(BDP-05FD : VRB1502)
(BDP-51FD : VRB1505)

2.2 SPECIFICATIONS

Model			BDP-05FD
Type			Blu-ray Disc PLAYER
Rated voltage			AC 120 V
Rated frequency			60 Hz
Power consumption			37 W
Power consumption (standby)			0.5 W
Weight			5.7 kg (12 lb 10 oz)
External dimensions (including projecting parts)			420 mm (W) x 124 mm (H) x 360 mm (D) ($16\frac{9}{16}$ in. (W) x $4\frac{15}{16}$ in. (H) x $14\frac{3}{16}$ in. (D))
Tolerable operating temperature			+5 °C to +35 °C (+41 °F to +95 °F)
Tolerable operating humidity			5 % to 85 % (no condensation)
Output terminals	**Video outputs**	**Video**	1 set, RCA jack (1.0 Vp-p (75Ω))
		S-Video	1 set, S-Video jack: Y (luminance): 1.0 Vp-p (75Ω) C (color): 0.286 Vp-p (75Ω)
		Component video	1 set, pin-plug jacks: Y: 1.0 Vp-p (75Ω) P_B, P_R: 0.7 Vp-p (75Ω)
		HDMI	1 set, 19-pin (5V, 150 mA)
	Audio outputs	**2-channel (stereo)**	Number of channels: 2, RCA jacks
		7.1-channel (multi-channel: front left/ right, surround left/right, center, surround back left/right, subwoofer)	Number of channels: 8, RCA jacks
		Audio output level	200 mVrms (1 kHz, –20 dB)
		Frequency response	4 Hz to 88 kHz (192 kHz sampling)
		S/N ratio	115 dB
		Dynamic range	103 dB
		Total harmonic distortion	0.0015 %
		Wow & flutter	Below measurable limits (±0.001 % W. PEAK)
	Digital audio outputs	**Optical**	1 set, Optical digital jack
		Coaxial	1 set, RCA jack
Control		**Input**	1 set, Minijack (3.5 ø)

Note

- The specifications and design of this product are subject to change without notice.
- This product includes FontAvenue® fonts licensed by NEC Corporation. FontAvenue is a registered trademark of NEC Corporation.

Model			BDP-51FD
Type			Blu-ray Disc PLAYER
Rated voltage			AC 120 V
Rated frequency			60 Hz
Power consumption			34 W
Power consumption (standby)			0.5 W
Weight			5.6 kg (12 lb 6 oz)
External dimensions (including projecting parts)			420 mm (W) x 124 mm (H) x 361 mm (D) ($16\frac{9}{16}$ in. (W) x $4\frac{15}{16}$ in. (H) x $14\frac{1}{4}$ in. (D))
Tolerable operating temperature			+5 °C to +35 °C (+41 °F to +95 °F)
Tolerable operating humidity			5 % to 85 % (no condensation)
Output terminals	**Video outputs**	**Video**	1 set, RCA jack (1.0 Vp-p (75 Ω))
		S-Video	1 set, S-Video jack: Y (luminance): 1.0 Vp-p (75 Ω) C (color): 0.286 Vp-p (75 Ω)
		Component video	1 set, pin-plug jacks: Y: 1.0 Vp-p (75 Ω) P_B, P_R: 0.7 Vp-p (75 Ω)
		HDMI	1 set, 19-pin (5V, 150 mA)
	Audio outputs	**2-channel (stereo)**	Number of channels: 2, RCA jacks
		7.1-channel (multi-channel: front left/ right, surround left/right, center, surround back left/right, subwoofer)	Number of channels: 8, RCA jacks
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Control		**Input**	1 set, Minijack (3.5 ø)

Note

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2.3 DISC/CONTENT FORMAT

Playable discs

Discs with the logo marks below indicated on the disc label, package or jacket can be played.

Disc type		Logo	Application format					
			BDMV[1]	BDAV	DVD-Video	DVD VR	CD-DA DTS-CD	DATA-DISC[2]
BD	BD-ROM		✓	✓	✗	✗	✗	✗
	BD-R		✓	✓	✗	✗	✗	✗
	BD-RE		✓	✓	✗	✗	✗	✗
DVD	DVD-ROM		✓	✗	✓	✗	✗	✓
	DVD-R		✓	✗	✓	✓	✗	✓
	DVD-R DL (Dual Layer)		✓	✗	✓	✓	✗	✓
	DVD-RW		✓	✗	✓	✓	✗	✓
	DVD+R		✓	✗	✓	✗	✗	✓
	DVD+RW		✓	✗	✓	✗	✗	✓
CD	CD-DA (Music CD)		✗	✗	✗	✗	✓	✗
	CD-R		✗	✗	✗	✗	✓	✓
	CD-RW		✗	✗	✗	✗	✓	✓
	CD-ROM		✗	✗	✗	✗	✓	✓

1. Including the AVCHD format.
2. Discs on which music files are recorded

❖ Discs that cannot be played

- HD DVDs
- DVD Audio discs
- DVD-RAM discs
- Non-finalized DVD-R/DVD-RW/DVD+R/DVD+RW discs in the DVD-Video format and AVCHD format
- Non-finalized Dual Layer DVD-R discs in the DVD VR format
- SACDs
- Video CDs
- SVCDs

This player conforms to NTSC standards. Discs for which “NTSC” is indicated on the disc label, package or jacket can be played.

“Blu-ray Disc” and Blu-ray Disc are trademarks.

DVD is a trademark of DVD Form at/Logo Licensing Corporation.

Note

- Some discs cannot be played, even if one of the above logo marks is indicated.
- To play 8 cm discs, set the disc in the 8 cm disc depression in the center of the disc tray. No adapter is necessary. 8 cm BD-ROMs cannot be played.

❖ About audio formats

The following audio formats are supported on this player:

- Dolby TrueHD
- Dolby Digital Plus
- Dolby Digital
- DTS-HD Master Audio
- DTS-HD High Resolution Audio
- DTS Digital Surround
- MPEG
- MPEG-2 AAC
- Linear PCM

To enjoy the surround sound of Dolby TrueHD, Dolby Digital Plus, DTS-HD Master Audio and DTS-HDHigh Resolution Audio, it is recommended to connect the player to an AV receiver or amplifier compatible with these audio formats using an HDMI cable. After loading a BD containing sound in one of these audio formats, select the audio format on the menu screen.

DOLBY TRUEHD DOLBY DIGITAL • PLUS DOLBY DIGITAL

Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are trademarks of Dolby Laboratories.

dts-HD™ Advanced Digital Out

Manufactured under license under U.S. Patent #: 5,451,942; 5,956,674; 5,974,380; 5,978,762; 6,487,535 & other U.S. and worldwide patents issued & pending. DTS isa registered trademark and the DTS logos, Symbol, DTS-HD and DTS-HD Advanced Digital Out are trademarks of DTS, Inc. © 1996-2007 DTS, Inc. All Rights Reserved.

❖ Playing BDs

- BDs (BDMV) compatible with th e formats below can be played.
  - – Blu-ray Disc Read-Only (ROM) Format Version 2
  - – Blu-ray Disc Recordable (R) Format Version 2
  - – Blu-ray Disc Rewritable (RE) Format Version 3

  This player supports BD-ROM Profile 1 Version 1.1. BONUSVIEW Functions such asplayback of secondary video (Picture-in-Picture) and secondary audio can be used. For details on secondary video and secondary audio playback, refer to the disc’s instructions.

BONUS*VIEW*™

“BONUSVIEW” is trademark of Blu-ray Disc Association.

When a BD-ROM is played, additional data may be stored in the player’s memory area (local storage). If the message indicating low memory (local storage) appears, erase the BDMV data.

- BDs (BDAV) compatible with the formats below can be played.
  - – Blu-ray Disc Recordable (R) Format Version 1
  - – Blu-ray Disc Rewritable (RE) Format Version 2
- Dual Layer BDs can be played.
- Music files recorded on BDs cannot be played.
- 8 cm BD-ROMs cannot be played.

❖ Playing DVDs

- DVD-Video can be played.
- DVD-R/-RW/+R/+RW discs recorded in the DVD-Video format can be played (finalize them before playing them on this player).
- DVD-R/-RW discs recorded in the VR format (Video Recording format) can be played.
- This label indicates playback compatibility with DVD-RW discs recorded in VR format (VideoRecording format). However, for discs recorded with a record-only-once encrypted program, playback can only be achieved using a CPRM compatible device.

RW COMPATIBLE

- DVDs recorded in the AVCHD format can be played (finalize them before playing them on this player).

AVCHD™

"AVCHD" and the "AVCHD" logo are trademarks of Matsushita Electric Industrial Co., Ltd. and Sony Corporation.

- Music files recorded on DVD-R/-RW/+R/+RW discs can be played.
- Dual Layer DVDs can be played. However, Non-finalized Dual Layer DVD-R discs recorded in the VR format cannot be played (finalize them before playing them on this player).
- HD DVD, DVD Audio and DVD-RAM discs cannot be played.

❖ About region numbers

Blu-ray Disc Player and BD-ROM or DVD-Video discs are assigned region numbers according to the region in which they are sold. This player's region numbers are:

- BD-ROM: A
- DVD-Video: 1

Discs not including these numbers cannot be played. Discs playable on this player are as shown below.

- BDs: A (including A) and ALL

- DVDs: 1 (including 1) and ALL

❖ Playing CDs

- Music CDs (CD-DAs and DTS-CDs) can be played.
- Music files recorded on CDs can be played.
- SACD, Video CD and Super VCD discs cannot be played.
- Regarding copy protected CDs: This player is designed to conform to the specifications of the Audio CD format. This player does not support the playback or function of discs that do not conform to these specifications.

❖ DualDisc playback

A DualDisc is a new two-sided disc, one side of which contains DVD content — video, audio, etc. — while the other side contains non-DVD content such as digital audio material.

The DVD side of a DualDisc will be played on this player (excluding any DVD-Audio content).

The non-DVD, audio side of the disc is not compatible with this player.

It is possible that when loading or ejecting a DualDisc, the opposite side to that being played will be scratched. Scratched discs may not be playable.

For more detailed information on the DualDisc specification, please refer to the disc manufacturer or disc retailer.

❖ Playing discs created on computers

- It may not be possible to play DVD-R/-RW or CD-R/-RW discs recorded using a personal recorder or computer. (This can be due to various reasons, including disc properties, scratches, dirt on the disc, dirt on the player's lens, condensation and so on.)
- It may not be possible to play discs recorded using a computer due to the application settings or environment. Record discs in the proper format. For details, contact the dealer.

Playable files

Music files recorded on DVDs and CDs can be played.

Caution

- In DVD, only the one recorded by the ISO 9660 file system can be played.
- Some files may not be playable.
- For some files, it may not bepossible to use certain functions during playback.
- It may not be possible to play some files, even if they have the extension of a file playable on this player.
- Files protected by DRM (Digital Rights Management) cannot be played.

❖ Supported music file formats

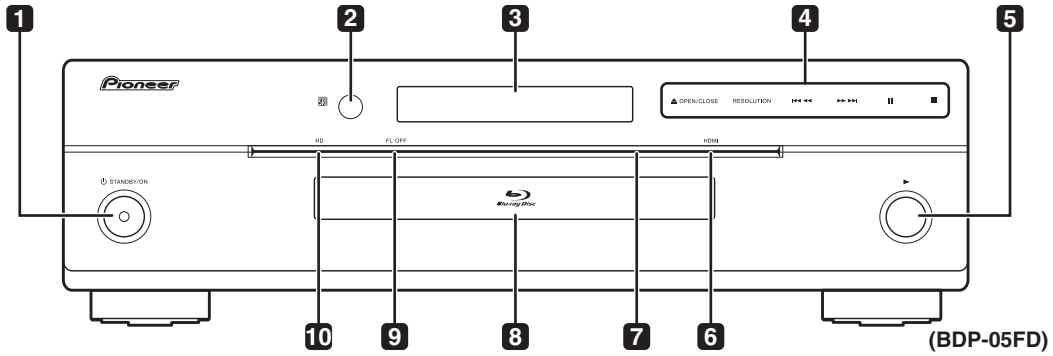
- **Windows Media™ Audio 9 (WMA9)**
  Bit rate: Up to 192 kbps
  Sampling frequencies: 22.05 kHz, 32 kHz, 44.1 kHz and 48 kHz
- **MPEG-1 Audio Layer 3 (MP3)**
  Bit rate: Up to 320 kbps
  Sampling frequencies: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz and 48 kHz

❖ Playable file extensions

- **Music files**
  .wma and .mp3
- Windows Media is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.
- This product includes technology owned by Microsoft Corporation and cannot be used or distributed without a license from Microsoft Licensing, Inc.

2.4 PANEL FACILITIES

Front Panel



1 ⏻ STANDBY/ON
Press to turn the power on and off.

2 Remote control sensor
Point the remote control to this, then operate it within approximately 23 feet.

The player may have trouble capturing remote control signals if there is a fluorescent light nearby. If this happens, move the player away from the fluorescent light.

3 Front panel display

4 Touch sensor – Touch the center of the words or marks lightly to operate.

⏏ OPEN/CLOSE – Press to open and close the disc tray.

RESOLUTION – Press to switch the output video resolution from the HDMI output or component video output terminals.

I◄◄/◄◄ – Press to skip to the beginning of the previous title/ chapter/track/file. Press and hold to start reverse scanning.

►►/►►I – Press to skip to the beginning of the next title/ chapter/track/file. Press and hold to start forward scanning.

II – Press during playback to pause. Press again to restrart playback.

■ – Press to stop playback.

5 ►
Press to start playback.

6 HDMI indicator
This lights when an HDMI-compatible device is connected.

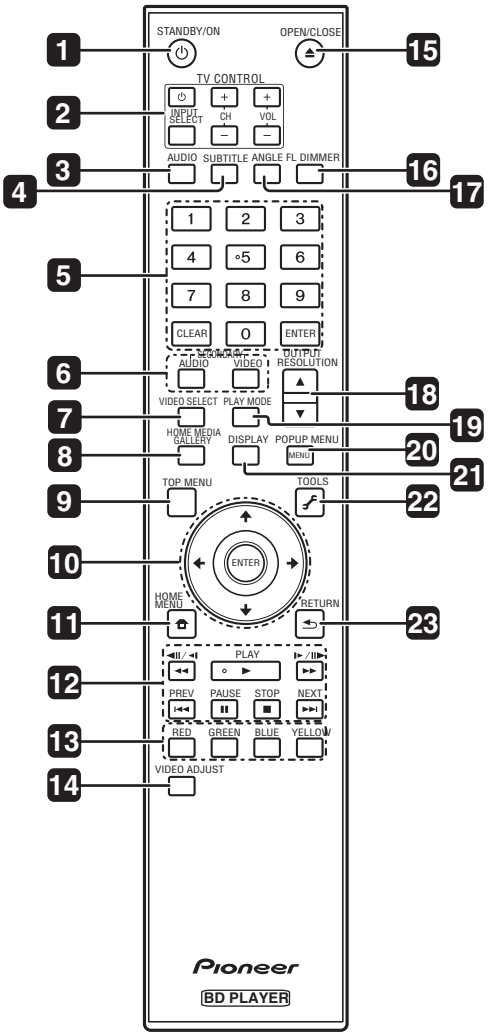
7 Touch sensor indicator
This lights when the touch sensor is touched.

8 Disc tray

9 FL OFF indicator
This lights when **Off** is selected with **FL DIMMER**

10 HD indicator
This lights when an HDMI cable is connected and video signals are being output with a resolution of 1080/60i, 1080/60p, 1080/24p or 720/60p. It also lights when a component video cable is connected and video signals are being output with a resolution of 1080/60i or 720/60p.

Remote control unit



1 ⏻ STANDBY/ON
Press to turn the power on and off.

2 TV CONTROL
Your TV can be controlled using the player's remote control.

⏻ – Press to turn the TV's power on and off.

INPUT SELECT – Press to switch the TV's input.

CH +/– – Press to select the TV channel.

VOL +/– – Press to adjust the volume.

3 AUDIO
Press to switch the audio streams/channels.

4 SUBTITLE
Press to switch the subtitles.

5 Number buttons – Use these to select and play the title/chapter/track you want to watch or listen to and to select items from menus.

CLEAR – Press to clear the numeric number, etc.

ENTER – Press to execute the selected item or enter a setting that has been changed, etc.

6 SECONDARY AUDIO– When playing a BD-ROM on which secondary audio is recorded, press to switch to the secondary audio.

SECONDARY VIDEO– When playing a BD-ROM on which secondary video (Picture-in-Picture) is recorded, press to switch to the secondary video.

7 VIDEO SELECT
Press to switch the terminal from which the video signals are output. Use to switch between digital output (HDMI output) and analog output (Component Video output, S-Video output or Video output) **(the signals are only output from the selected video output terminal).**

8 HOME MEDIA GALLERY
Press to display/hide the HomeMedia Gallery screen.

9 TOP MENU
Press to display the top menu of the BD-ROM or DVD-Video.

10 ↑/↓/←/→ – Use to select items, change settings and move the cursor.

ENTER – Press to execute the selected item or enter a setting that has been changed, etc.

11 HOME MENU
Press to display/hide the Home Menu.

12 ▶ PLAY – Press to start playback.

⏸ PAUSE – Press to pause playback. Press again to restart playback.

■ STOP– Press to stop playback.

⏮ PREV/ ⏭ NEXT – Press to skip to the beginning of the previous/next title/chapter/track/file.

◀◀ / ◀⏸ / ◀❙ – Press during playback to start reverse scanning. While playback is paused, press for step reverse playback. Press and hold while playback is paused for reverse slow motion playback.

❙▶ / ⏸▶ / ▶▶ – Press during playback to start forward scanning. While playback is paused, press for step forward playback. Press and hold while playbackis paused for forward slow motion playback.

13 RED/GREEN/BLUE/YELLOW
Use these to navigate BD-ROM menus.

14 VIDEO ADJUST
Press to display/hide the Video Adjust menu.

15 ⏏ OPEN/CLOSE
Press to open and close the disc tray.

16 FL DIMMER
Press to switch the brightness of the front panel display. The **FL OFF** indicator lights when **Off** is selected.

17 ANGLE
Press to switch the BD-ROM or DVD-Video camera angles.

18 OUTPUT RESOLUTION
Use these to switch the output video resolution from the **HDMI OUT** or **COMPONENT VIDEO** output terminals.

19 PLAY MODE
Press to display/hide the Play Mode screen.

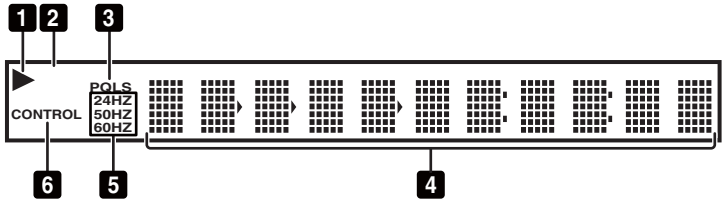
20 POP UP MENU/MENU
Press to display the BD-ROM or DVD-Video menus.

21 DISPLAY
Press to display disc information.

22 TOOLS
Press to display/hide the **TOOLS** menu.

23 RETURN
Press to return to the previous screen.

Front Panel Display



1 ▶
Lights during playback.

2 ❚❚
Lights when the pause mode is set.

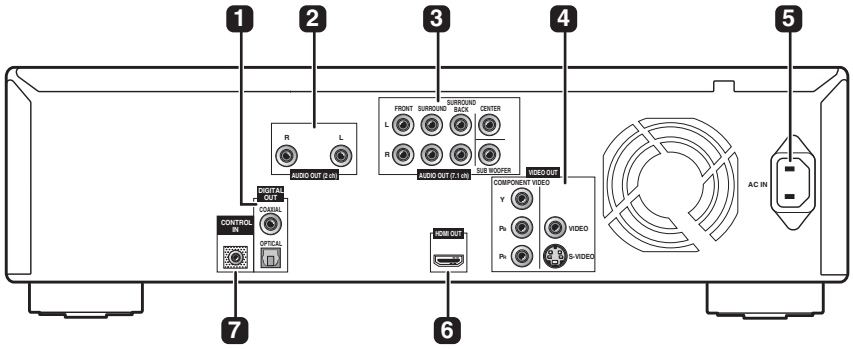
3 PQLS
Lights when the PQLS function is activated.

4 Counter display
Displays the title/chapter/track number, elapsed time, etc.

5 24HZ/50HZ/60HZ
The frequency of the video frame or field being output lights.

6 CONTROL
Lights when the "HDMI Control" function is activated.

Rear Panel



1 DIGITAL OUT (COAXIAL/OPTICAL)
Connect with the digital audio input terminal on an AV receiver or amplifier, etc.

2 AUDIO OUT (2 ch) terminals
Connect with the audio input terminals on a TV, AV receiver or amplifier, etc.

3 AUDIO OUT (7.1 ch) terminals
Connect with the multi-channel (7.1- or 5.1-channel) audio input terminals on an AV receiver or amplifier, etc.

4 VIDEO OUT terminals
VIDEO – Connect with the video input terminal on a TV, AV receiver or amplifier, etc.

S-VIDEO – Connect with the S-Video input terminal on a TV, AV receiver or amplifier, etc.

COMPONENT VIDEO – Connect with the component video input terminals on a TV, AV receiver or amplifier, etc.

5 AC IN
Connect the power cord here.

6 HDMI OUT terminal
Connect with an HDMI-compatible TV, AV receiver or amplifier, etc.

7 CONTROL IN terminal
Use to control this player from the remote sensor of another Pioneer component with a **CONTROL OUT** terminal and bearing the 5R mark. Connect the **CONTROL OUT** of the other component to the **CONTROL IN** of this player using a mini-plug cord.

Caution

- Be sure to connect cables for outputting the audio and video signals.
- When connected via System Control, point the remote control toward the connected component (such as an AV receiver or amplifier). The remote will not work correctly when pointed at this player.
- You cannot use System Control with components that do not have a System Control terminal or with components manufactured by companies other than Pioneer.

3. BASIC ITEMS FOR SERVICE
3.1 CHECK POINTS AFTER SERVICING

Items to be checked after repair (BD players)

To ensure the quality of the product after repair, check the recommended items shown below:

No.	Procedures	Item to be checked
1	Check the version of the firmware in Service mode.	The version must be the latest. If the version is not the latest, update the firmware.
2	Check if all the symptoms pointed out by the customer have been addressed. If a symptom pointed out by the customer is attributable to a particular disc, that disc must be played back.	The symptoms in question must not be reproduced. Video, audio, and operations must be normal.
3	Measure playback error rates at the innermost and outermost tracks, by playing back the following discs: BD-ROM test disc (GGV1308) DVD test disc (GGV1025)	The error rates must be 1.0e-3 or less. This procedure can determine if the drive is degraded.
4	Check playback of a CD disc (track search).	Audio and operations, such as a search, must be normal.
5	Check playback of a DVD disc (menu operations, title/chapter search).	Video, audio, and operations, such as a search, must be normal.
6	Check playback of a BD disc (menu operations, title/chapter search).	Video, audio, and operations, such as a search, must be normal.
7	Check the cabinet.	Check for any scratches or dirt that have been made or attached on the cabinet after receiving the product for repair.

See the table below for the items to be checked regarding video and audio:

Item to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Dot noise	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Color disappearance	
Mottled color	

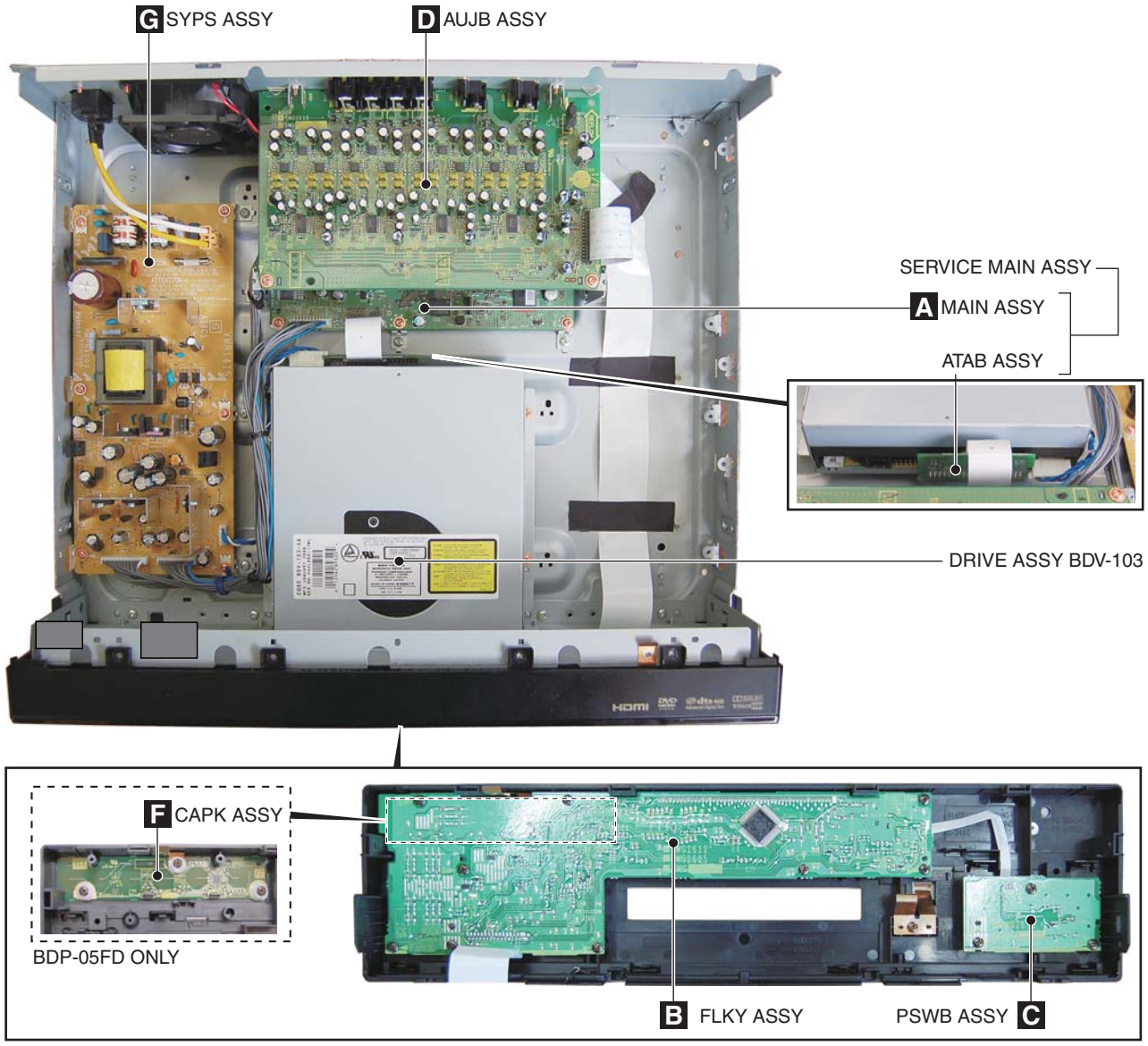
■ Cleaning

Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Position to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

3.2 PCB LOCATIONS



NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

Mark	No.	Description	Part No.
LIST OF ASSEMBLIES			
	1	CAPK ASSY (BDP-05FD only)	VWG2614
NSP	1	AUJB ASSY (BDP-05FD)	VWG2615
NSP	1	AUJB ASSY (BDP-51FD)	VWG2632
NSP	1	FLKB ASSY (BDP-05FD)	VWM2463
NSP	1	FLKB ASSY (BDP-51FD)	VWM2481
	2	FLKY ASSY (BDP-05FD)	VWG2612
	2	FLKY ASSY (BDP-51FD)	VWG2625
	2	PSWB ASSY	VWG2613
	1	SERVICE MAIN ASSY (BDP-05FD)	VXX3326
	1	SERVICE MAIN ASSY (BDP-51FD)	VXX3328
NSP	2	MAIN ASSY (BDP2.0)(BDP-05FD)	VWV2315
NSP	2	MAIN ASSY (BDP2.0)(BDP-51FD)	VWV2375
	2	ATAB ASSY (BDP2.0)	VWV2360
⚠	1	SYPS ASSY	VWR1415
	1	DRIVE ASSY BDV-103	VXX3325

3.3 JIGS LIST

■ Jigs List

Name	Jig No.	Remarks
Service Remote Control Unit	GGF1067	Adjustment, diagnosis
DVD Test Disc (DVD-Video)	GGV1025	Check of DVD-Video
BD-ROM Test Disc	GGV1308	Check of BD-ROM
ID Data Disc for Blu-ray player Type 2 Vol 1.0	GGV1324	Diagnosis (ID data setting)
Disc Ejection Rod	GGF1529	Emergency Disc Ejection

A

B

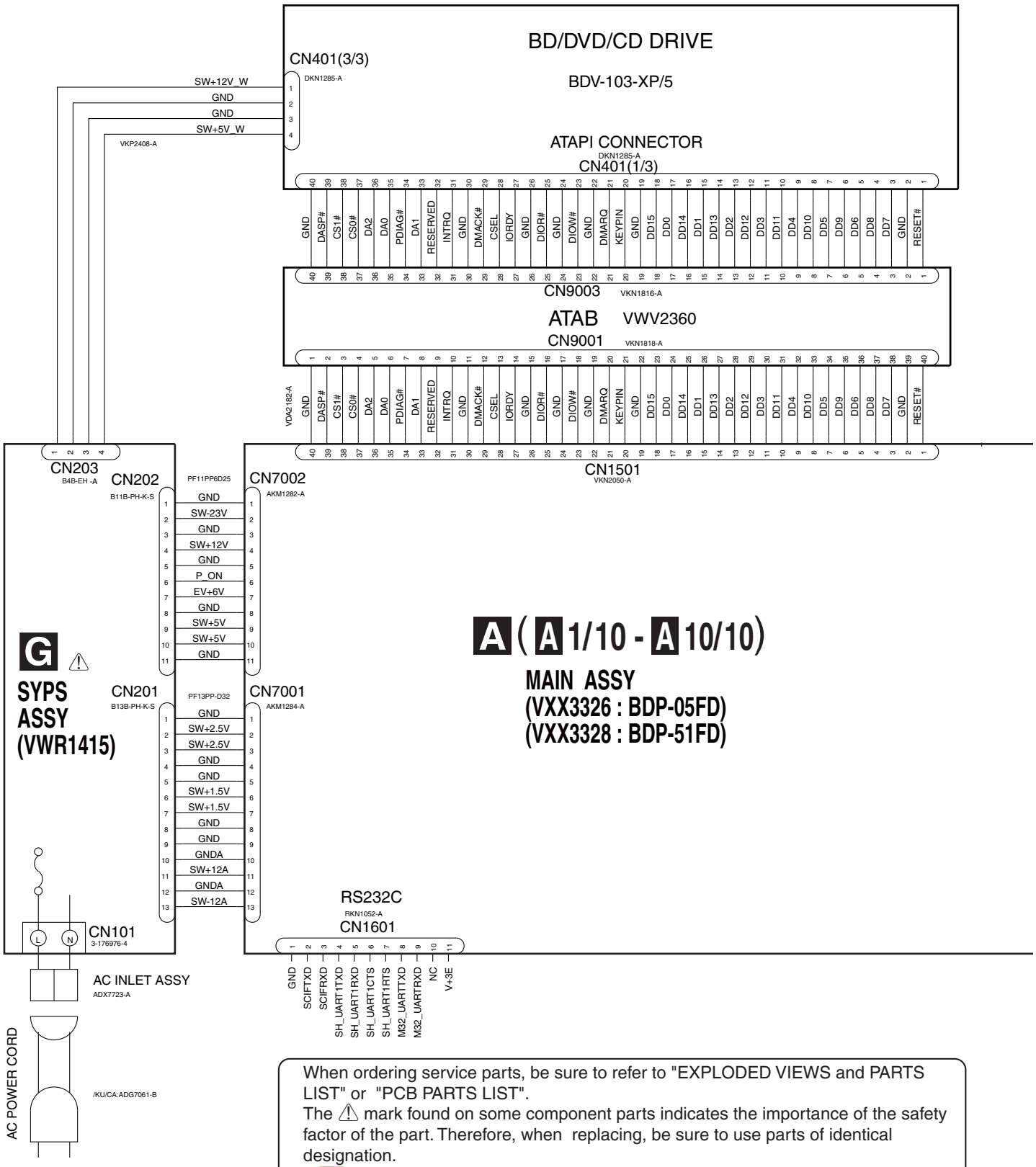
C

D

E

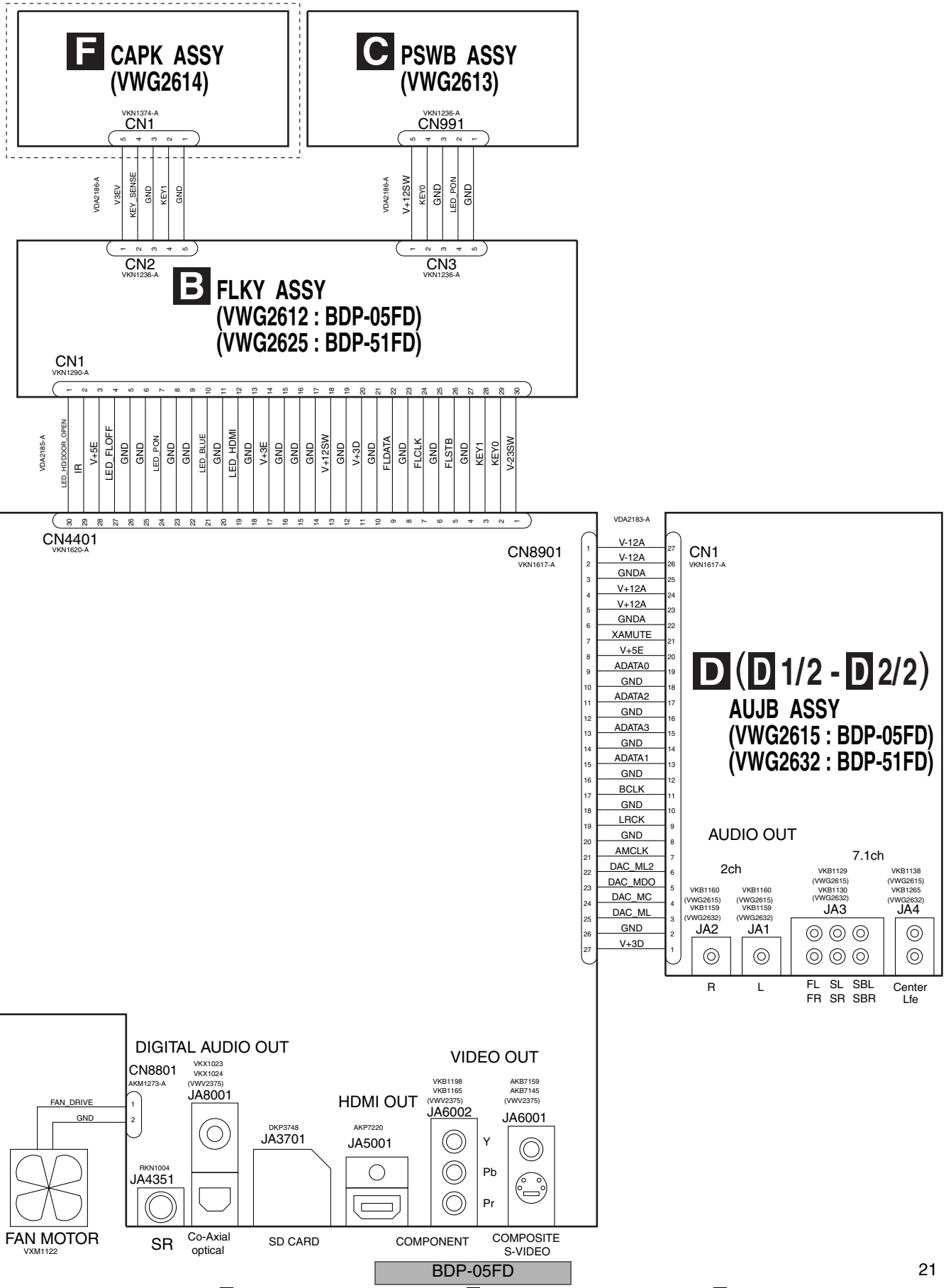
F

4. BLOCK DIAGRAM
4.1 OVERALL WIRING DIAGRAM



When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
: The power supply is shown with the marked box.

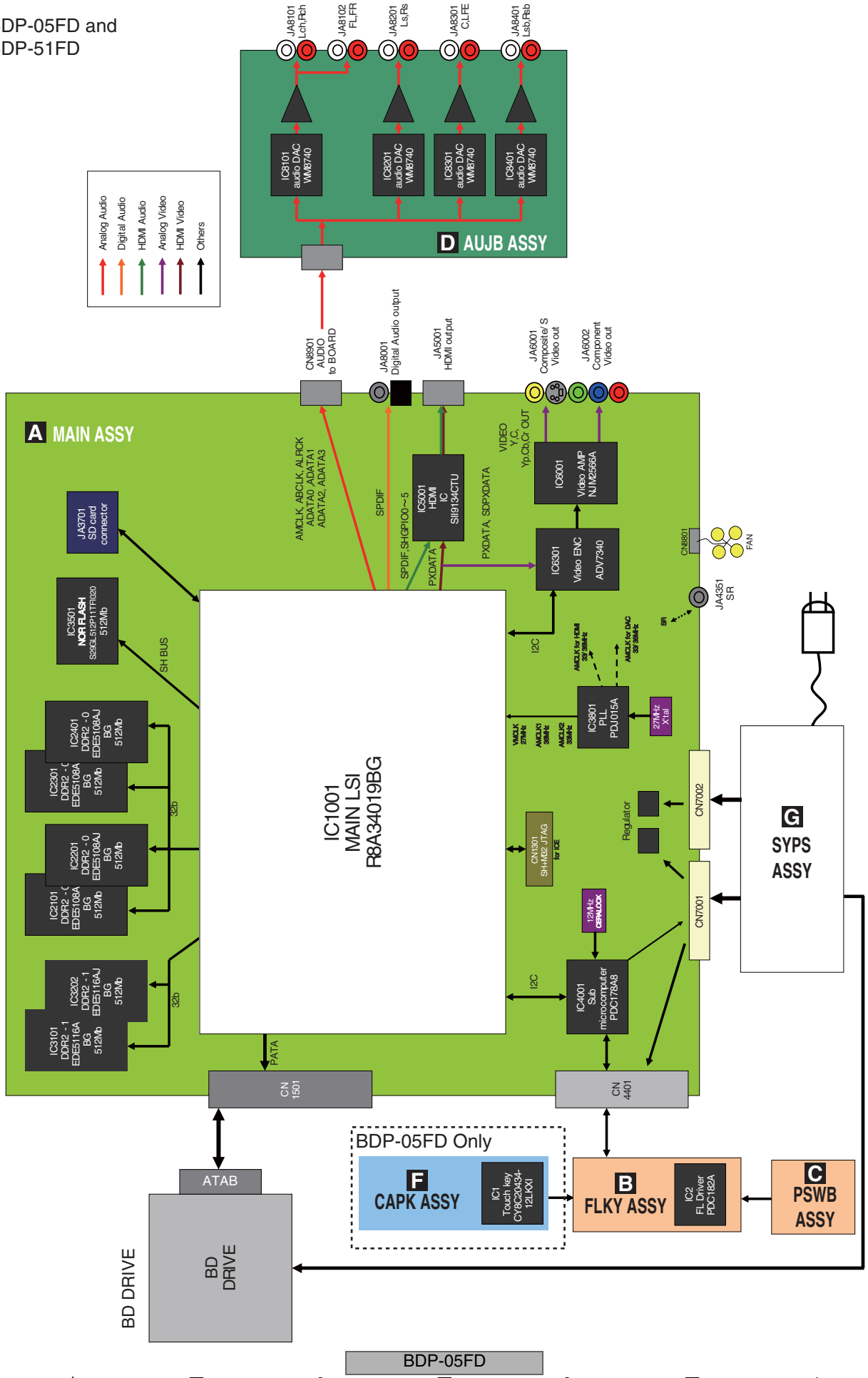
BDP-05FD Only



BDP-05FD

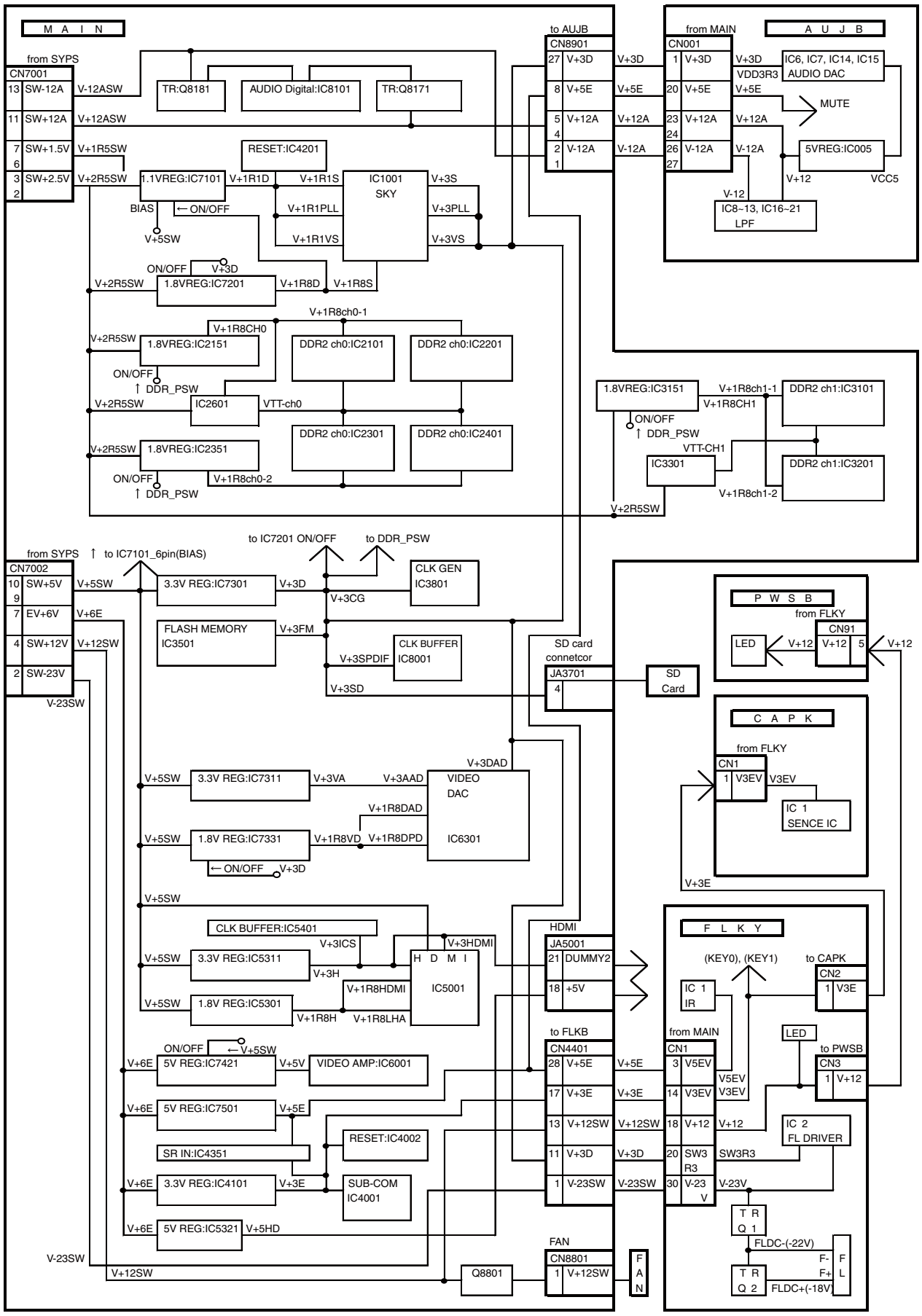
4.2 BLOCK DIAGRAM

BDP-05FD and
BDP-51FD

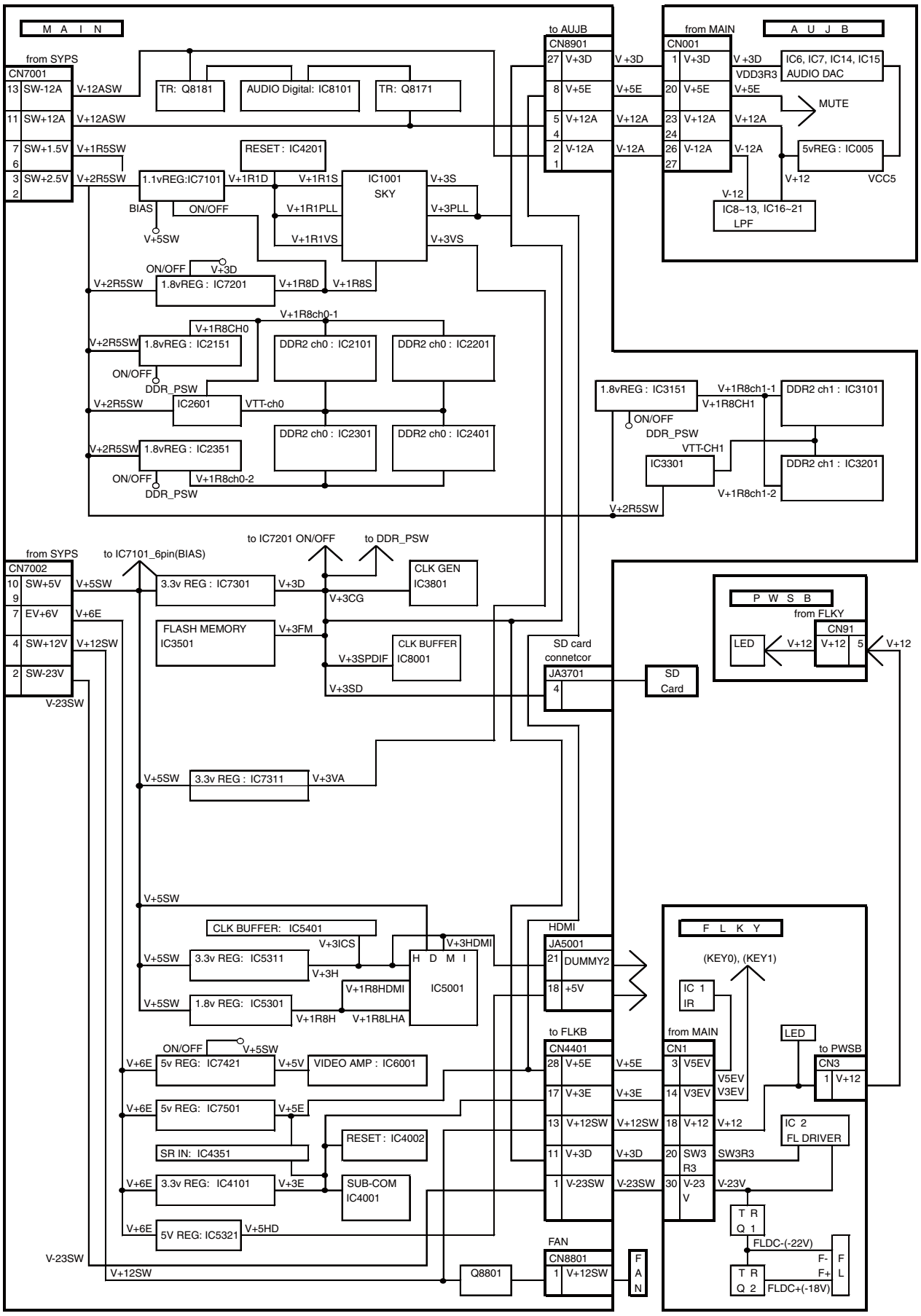


4.3 POWER BLOCK DIAGRAM

BDP-05FD POWER BLOCK DIAGRAM



BDP-51FD POWER BLOCK DIAGRAM



5. DIAGNOSIS
5.1 POWER ON SEQUENCE

■ Power On Sequence

① Pressing of the POWER key is detected by the IC4001 Submicrocomputer on the MAIN Assy. The IC4001 then outputs a POWER_ON signal to the SYPS Assy.

↓

② After receiving the POWER_ON signal, the SYPS Assy activates, secondary Power[SW+12 V], setting it to ON.

↓

③ The R8A34019BG (IC1001), the core LSI, starts up. {RS-232C connectorCN1601, log it to ON}

↓

④ Communication between the R8A34019BG and the DDR2 SDRAM starts.

↓

⑤ Communication between the R8A34019BG and the FLASH_IC starts.

↓

It takes about 1 minute to complete the startup process.

■ Troubleshooting

① Are the pins at CN7001 and CN7002 supplied with voltages?
MAIN ASSY(1/8) V+3S, V+3PLL with 3.3 voltages?
MAIN ASSY(1/8) V+1R8S with 1.8 voltages?
MAIN ASSY(1/8) V+1R1S with 1.1 voltages?
Is the reset signal H? (R1161)
Is the 27 MHz CLK oscillating? (R1141)

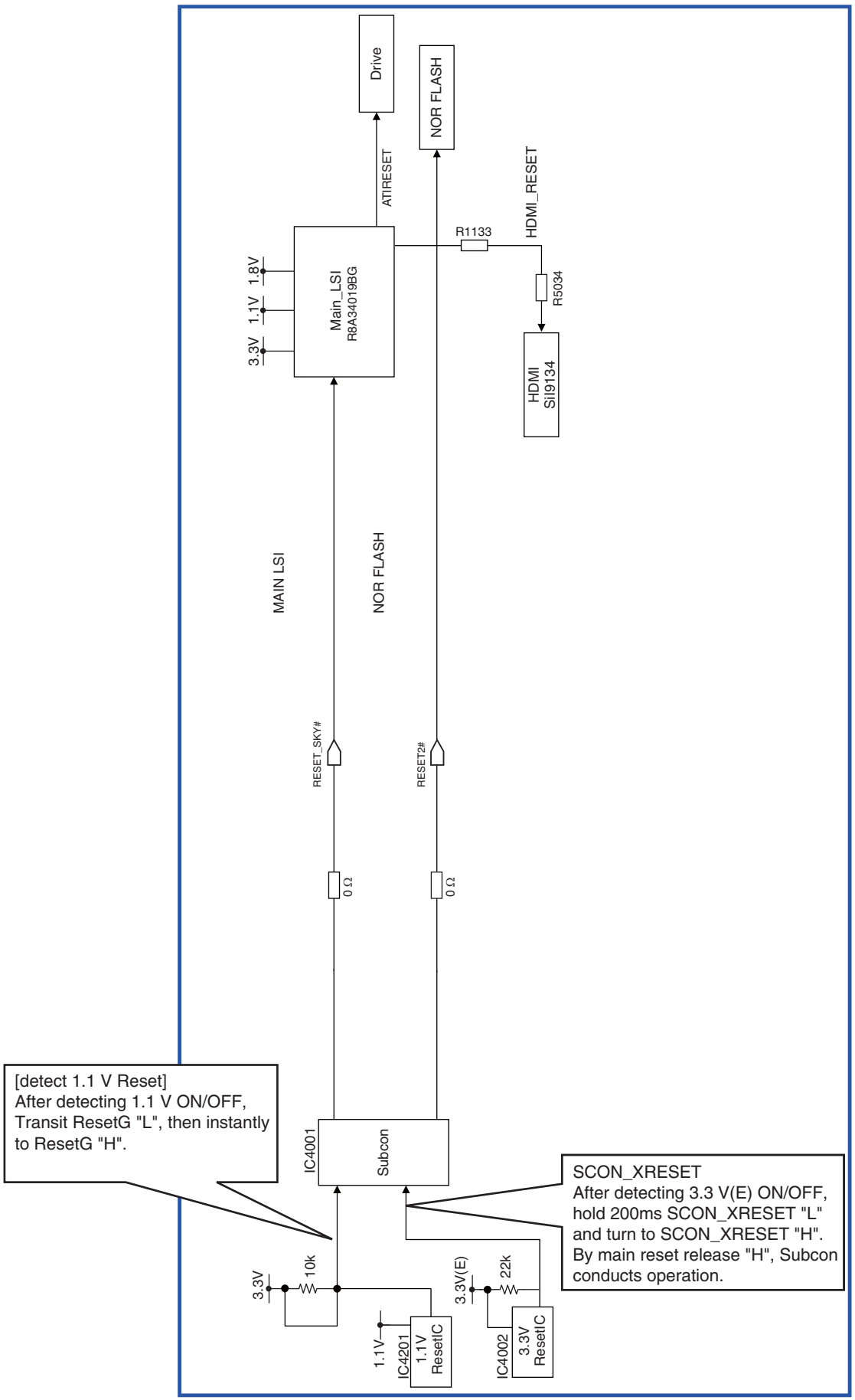
↓

② Power ON, and log of R8A34019BG stops with [DRAM failed].
R8A34019BG and communication failure of DDR memory.

↓

③ Power ON, and log of R8A34019BG stops with [zboot failed].
R8A34019BG and communication failure of FLASH memory.

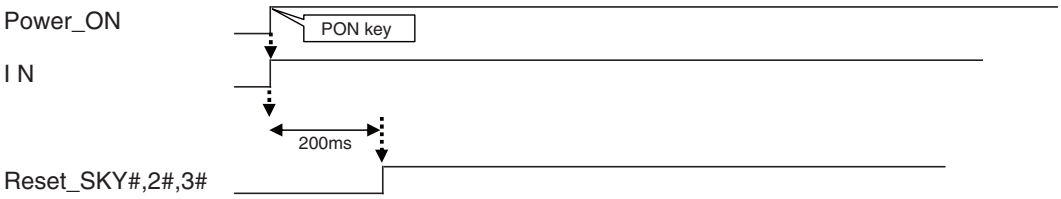
5.2 RESET ON SEQUENCE



1.Reset specification

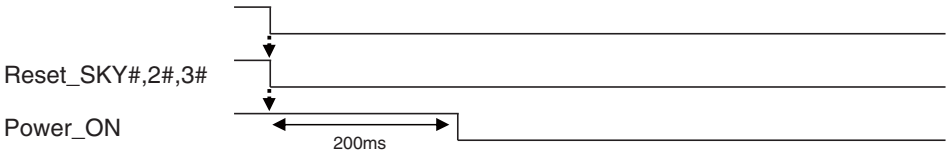
[On start-up]

①Receiving Power ON key, sub-microcomputer turns Power_ON signal to ”H”.
②Receiving Power ON signal, power turns each SW power to ”ON”.
③1.1 V turns ON.
④Sub-microcomputer is (after 200ms) to Reset_SKY#, Reset 2#, Reset 3# ”L” turn to ”H”.



[At normal end]

①Sub-microcomputer detects the pushing of Power key, then notifies PowerOFF to R8A34019BG by I^2C.
②Receiving PowerOFF notification, R8A34019BG conducts end processing.
③R8A34019BG instructs PowerOFF to sub-microcomputer by I^2C.
④Sub-microcomputer turns Reset_SKY#, Reset 2#,Reset 3#,to ”L”, and after 200msec, PowerON signal to ”L”.
⑤After 50msec, power turns each SW power to OFF.

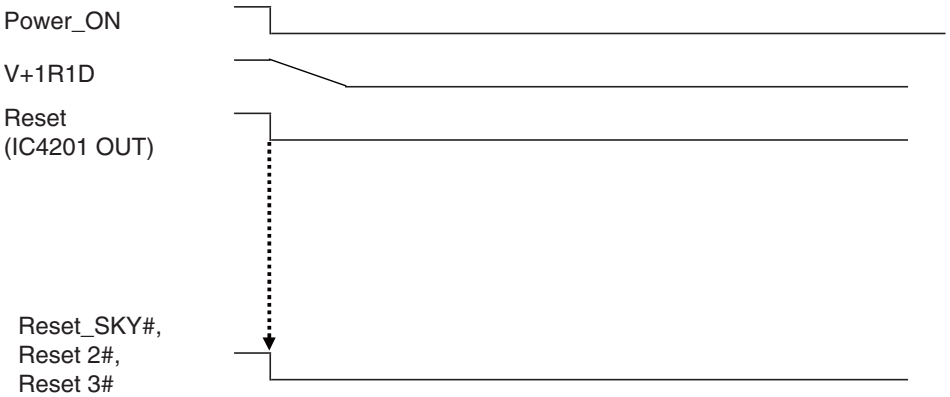


[Power abnormality]

*Reset operation in the case of 1.1 V drop.
Determine if ResetG becomes ”L”, then turn Reset# - Reset3# to “L”.

[At abnormal end]

①ACOFF
②By turning V+1R1D to OFF, ResetG# turns to ”L” by ResetIC.



6. SERVICE MODE
6.1 OSD

■ Indication items for the OSDs for debugging

Remote Control Unit Command	Screen	Indication Items for the OSDs	Remarks
[ESC]+[DISP]	1st screen	Service Indication (software information)	
		Product serial No./destination	
		Model No.	
		Released version No.	
		Revision No.	
		Submicrocomputer version data	
		Drive model No.	
		Drive version No.	
		Drive serial No.	
		DVD-Video region No.	
		BD-ROM region No.	
		CPRM ID	
		MAC address	
	2nd screen	OSD Filter	
		Setup value of the OSD FILTER	The data must be displayed on the subpage of the software information screen.
[ESC]+[SIDE-B]	1st screen	Specifications 1 for error rate measurement (with OK/NG judgment)	
		Results of error rate measurement OK/NG	To see the result, press ESC then SIDE-B.
[ESC]+[DISP]+[2]	1st screen	Specifications 2 for error rate measurement (for continuous playback)	
		Title/Chapter data	
		Playback duration data	
		LgcSct address data	
		Error rate data (error rate value)	
[ESC]+[DISP]+[3]	1st screen	ATA/ATAPI DEBUG OSD-Command history (ALL)	
		Packet command from the host	
		Error data from the status register	
	2nd screen	ATA/ATAPI DEBUG OSD-Command history (ERROR)	
		Packet command that has been failed	
		Error Code	
		Command-specific information	
	3rd screen	ATA/ATAPI DEBUG OSD-Drive maintenance data	
		Power ON/accumulated power-on duration	
		LD read power-on duration for the BD	
		LD read power-on duration for the DVD	
		Serial No. of the PU	
	4th screen	ATA/ATAPI DEBUG OSD-Judgment of LD degradation	
		Judgment of degradation of the LD for the BD (OK/NG)	
		Judgment of degradation of the LD for the DVD (OK/NG)	
		Judgment of degradation of the LD for the CD (OK/NG)	
		Temperature inside the writer	
[ESC]+[DISP]+[4]		Results of self-diagnosis	
		Version/Revision Nos. of the SKY chip	
		HDMI transmitter IC check	
		Communication check of the submicrocomputer	
		PLL synthesizer check	
		DRIVE check	

Remote Control Unit Command	Screen	Indication Items for the OSDs	Remarks
[ESC]+[DISP]+[5]		AV output data	
		Video data	*These data are to be used merely as a guide, as they were designed to be used for product development.
		Video encoder data	
		Component output resolution	
		HDMI output resolution	
		Frame rate	
		Content resolution	
		Content aspect ratio	
		Data on VBID and WSS	
		CGMS-A/Copyright	
		APS	
		MacroVision	
		Aspect	
		Audio data	
		Sampling frequency	
		Category code (Number of Bits & definition)	
		Word Length	
		C/L bit: Indications on number of bits & status (Free/Once/Disable)	
		Audio muting status	
		LPCM/BitStream output	
		Number of output channels	
		HDMI ACP Type	
[ESC]+[DISP]+[6]		HDMI data	
[ESC]+[DISP]+[7]		Connection status	* Two screens are to be used for HDMI data.
		* No data because screen specifications are to be designed by engineers for the HDMI modules.	
[ESC]+[DISP]+[8]		User Interface data	
		Logs for received keys	
		* No data because screen specifications are to be designed by engineers for the UI modules.	
[ESC]+[DISP]+[9]		Contents data	
		BD-ROM	
		HDMV	
		BD-J	
		Authoring maker	
		Total number of titles	
		BD-R/RE	
		BDMV	
		BDAV	
		AVCHD	
		Authoring maker	
		Total number of titles	
		DVD	
		BDMV	
		AVCHD	
		DVD-Video	
		DVD VR	
		Authoring maker	
		Total number of titles	
		CD	
		Total number of titles	
		PC-FILES	
		Total number of files	

Remote Control Unit Command	Screen	Indication Items for the OSDs	Remarks
[ESC]+[DISP]+[10]		Playback data (BD-ROM)	
		Title No.	
		Chapter No.	
		Elapsed time within a title	
		Video data	
		Primary Video Stream	
		Secondary Video Stream	
		Resolution	
		Source video aspect ratio	
		Frame rate	
		AACS data	
		CPI	
		CCI	
		APS	
		ICT	
		DOT	
		Audio data	
		Primary Audio Stream	
		Secondary Audio Stream	
[ESC]+[DISP]+[11]		Playback data (BD-R/RE)	
		Title No.	
		Chapter No.	
		Elapsed time within a title	
		Navigation data	
		Playback stream format	
		SESF	
		ISDB	
		Video data	
		Video stream data	
		Playlist data (Virtual/Real-PlayList)	
		Playlist No.	
		Resolution	
		Source video aspect ratio	
		Frame rate	
		AACS data	
		CPI	
		CCI	
		APS	
		ICT	
		DOT	
		Audio data	
		Audio Stream data	

Remote Control Unit Command	Screen	Indication Items for the OSDs	Remarks
[ESC]+[DISP]+[12]	1st screen	Playback data (DVD)	
		Playback status data (PLAY, PAUSE, etc.)	
		Navigation data	
		Title No.	
		Chapter No.	
		Numbers of all chapters in a title	
		Elapsed time within a title	
		Elapsed time within a chapter	
		Number of multi-angles	
		Number of the selected multi-angle	
		Number of audio streams	
		Number of selected audio	
		Number of sub-pictures	
		No. of the selected sub-picture or OFF	
	2nd screen	Video data	
		Frame rate	
		Resolution	
		Aspect ratio	
		Progressive frame data	
		Repeat first field data	
		Maximum quantity/current quantity of video stream buffer	
		Audio data	
		Codec type	
		Sampling frequency	
		Number of channels	
		(With LPCM) Quantization bit rate	
		Maximum quantity/current quantity of audio stream buffer	
[ESC]+[DISP]+[13]	1st screen	Playback data (A/V decoder)	
		Primary A/V decoder data for DVD and BD	
		Error data of the video decoder	
		Error data of the audio decoder	
	2nd screen	Secondary A/V decoder data for BD	
		Error data of the video decoder	
		Error data of the audio decoder	
[ESC]+[DISP]+[14]		Playback data (CD)	
		Audio data	
		Playback track/all tracks	
		Playback duration of the track	
		Playback duration of the disc	
		Total duration of the track	
		Total duration of the disc	

Remote Control Unit Command	Screen	Indication Items for the OSDs	Remarks
[ESC]+[DISP]+[15]	1st screen	Playback data (PC Files)	
		Movie	
		Format (MPEG1/MPEG2-PS/MPEG2-TS/WMV…)	
		Resolution	
		NTSC/PAL	
		Aspect	
		File name	
	2nd screen	Music	
		Format (MP3,WMA,WAV ...)	
		Fs	
		Bitrate	
		Channel number	
		Track name	
	3rd screen	Photo	
		Format (JPEG/GIF/PNG ...)	
		Resolution (Pixel)	
		Aspect	
		Date	
		File name	
[ESC]+[AMON]+[TEST]		Destination setting screen	
		Input/setting of destination	
[ESC]+[STEREO]		CPRM ID Registration screen	
		ID registration	This screen is displayed when no ID is set.
		CPRM ID Clearing screen	
		Clearing of the registered ID	This screen is displayed when the ID has been set.

* For details on how to shift screens, see "Service Indication Screens".

■ Service Indication Screens

1. Overview

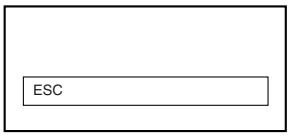
On Service Indication screens, data that are retained by the System Controller are displayed with the aid of the remote control unit for service (GGF1067). (Not for use by general users)
The maximum display area for on-screen displays is 64 one-byte characters (widthwise) × 17 lines (lengthwise).

2. How to Operate

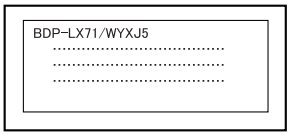
To display indications for servicing, use the remote control unit for service.

• How to enter Service Indication mode

The following key input can be accepted either in Normal Startup mode or Service mode.
(1) Without any GUI displayed, press the ESC key.



(2) Then press the DISP key. The 1st screen (version data, etc.) is displayed.



1st screen (version data, etc.)

(3) To shift to a subsequent screen, press the corresponding key:
[2]: 2nd screen: Error rate measurement 2 (for continuous playback)
[3]: 3rd screen: ATA/ATAPI debugging (drive data)

• How to exit Service Indication mode

Press the ESC key.

• How to shift between screens

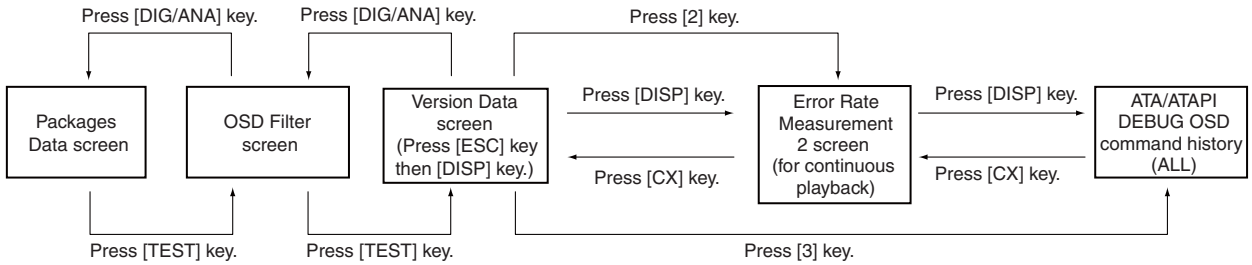
To shift to the next screen, press the DISP key. To shift to the previous screen, press the CX key.

• How to shift between subscreens

To shift to the next subscreen, press the DIG/ANA key. To shift to the previous subscreen, press the TEST key.

3. Overview of Screen Shifting

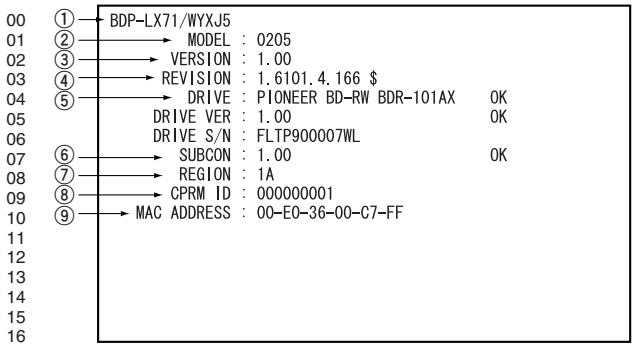
An overview of screen shifting in Service Indication mode is given below.



* To exit any screen, press the ESC key.
* For details on the Error Rate Measurement 2 screen, see the "Specifications 2 for Error Rate Measurement (for continuous playback)" .
* For details on the OSD Filter screen, see the "OSD Filter Setting".

4. Specifications of Version Data screen

• 1st screen (version data, etc)



① Data on the model: Model name/destination

② MODEL: Model No.

③ VERSION: Release version

④ REVISION: SVN Revision No.

⑤ DRIVE: Data on the built-in drive
Drive name: Judged as OK: The name assigned by the application program coincided with that obtained by the command.
Judged as NG: The name assigned by the application program did not coincide with that obtained by the command.
DRIVE VER: Version of the firmware
Judged as OK: The version assigned by the application program coincided with that obtained by the command.
Judged as NG: The version assigned by the application program did not coincide with that obtained by the command.
DRIVE S/N: Drive serial No. (For details on the drive serial No. indication, see the "Drive Serial No. Indication".)

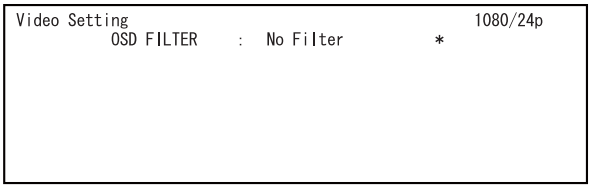
⑥ SUBCON: Firmware version of the submicrocomputer (PIC)
Judged as OK : The version assigned by the application program coincided with that obtained by the command.
Judged as NG+ : The version obtained by the command is newer than that assigned by the application program.
Judged as NG- : The version obtained by the command is older than that assigned by the application program.

⑦ REGION: Region codes for DVD-VIDEO and BD-ROM of the player
The above screen example shows that the DVD region code is 1 and the BD region code is A.
If a region has not been set, "VIRGIN ROM" is displayed for the DVD, and "F" is displayed for BD.

⑧ CPRM ID: CPRM key No.
If it has not been set, "??????????" is displayed.

⑨ MAC ADDRESS: MAC ADDRESS value
If it has not been set, "????????????????????" is displayed.

• 2nd screen (OSD Filter Setting)



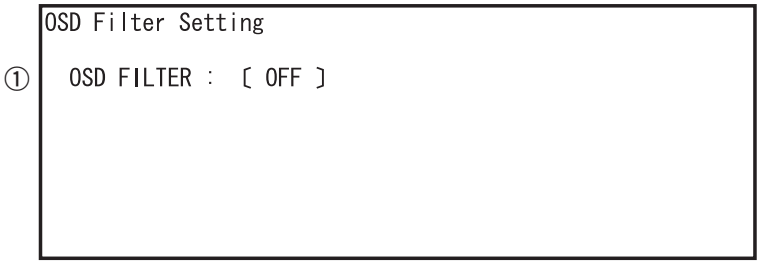
* For details on the OSD Filter screen, see the "OSD Filter Setting".

■ OSD Filter Setting

* The details of this section are to be determined later after register specifications are determined.

To display the Service Indication screen, press the ESC then DISP keys. Then press the DIG/ANA key once to switch to the OSD Filter Setting screen. The above key inputs can be accepted either in Normal Startup mode or Checker mode.

• OSD Filter Setting screen



① OSD Filter Setting value ON
OFF

Key operations of the OSD Filter Setting screen

Key	Operation	Setting value (*: Default)	Remarks
[<x3], [x3>]	For switching the OSD Filter Setting between ON or OFF	OFF/ON (*)	[<x3]: To set the OSD Brightness Filter to OFF [x3>]: To set the OSD Brightness Filter to ON
[ESC]	For clearing data or exiting the current mode	–	–

* Use the remote control unit for service for key operation.
* A setting becomes valid as soon as it is set. The setting value will be stored in nonvolatile memory, as with the setting values of the main unit. Therefore, the changed setting value will be retained upon the next power-on.
* About factory preset
  • If the ESC then CLEAR keys are pressed ("No power off" command) for factory presetting, the setting will be reset to default (ON).
  • If the STOP and POWER keys on the main unit are pressed simultaneously for factory presetting, the current setting will be retained.

■ Specifications 1 for Error Rate Measurement (with OK/NG judgment)

To measure the error rate for a certain duration, press the ESC then SIDE-B keys only during playback. The result of judgment (OK/NG) will be displayed on the FL display and as an OSD.
To exit Error Rate Measurement mode, press the ESC key while the error rate is being measured.
After exiting Error Rate Measurement mode, if the ESC then SIDE-B keys are pressed again to reenter Error Rate Measurement mode, measurement of the error rate will start from the beginning.
The error rate is measured for up to 5 sessions, and the displayed result is updated after measurement for each session is performed.
At the end of 5 sessions, the average error rate for the entire measurement range will be displayed. If measurement sessions are interrupted before 5 sessions, the average error rate up to the point of interruption will be calculated and displayed.

A result will be judged as NG if the measured error rate exceeded the reference value. See "OK/NG judgment" below.
(Only when the average error rate is judged as NG, the tray will be opened.)

Operation Specifications

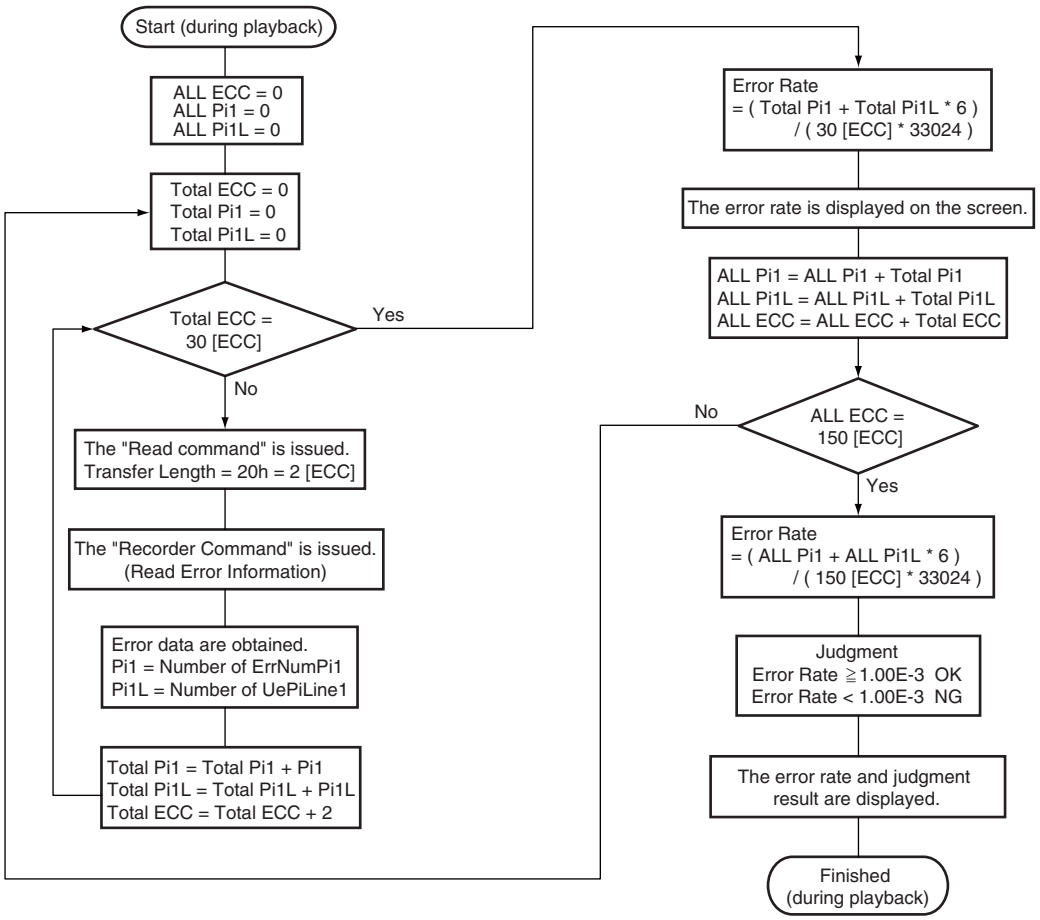
The following specifications must be met:

- When calculating an error rate, the denominator groups will be considered as shown below:
  For DVD: 28-32 ECCs (448-512 sectors)
  For BD: 95-105 clusters (3040-3360 sectors)
  Then the measurement result will be displayed.

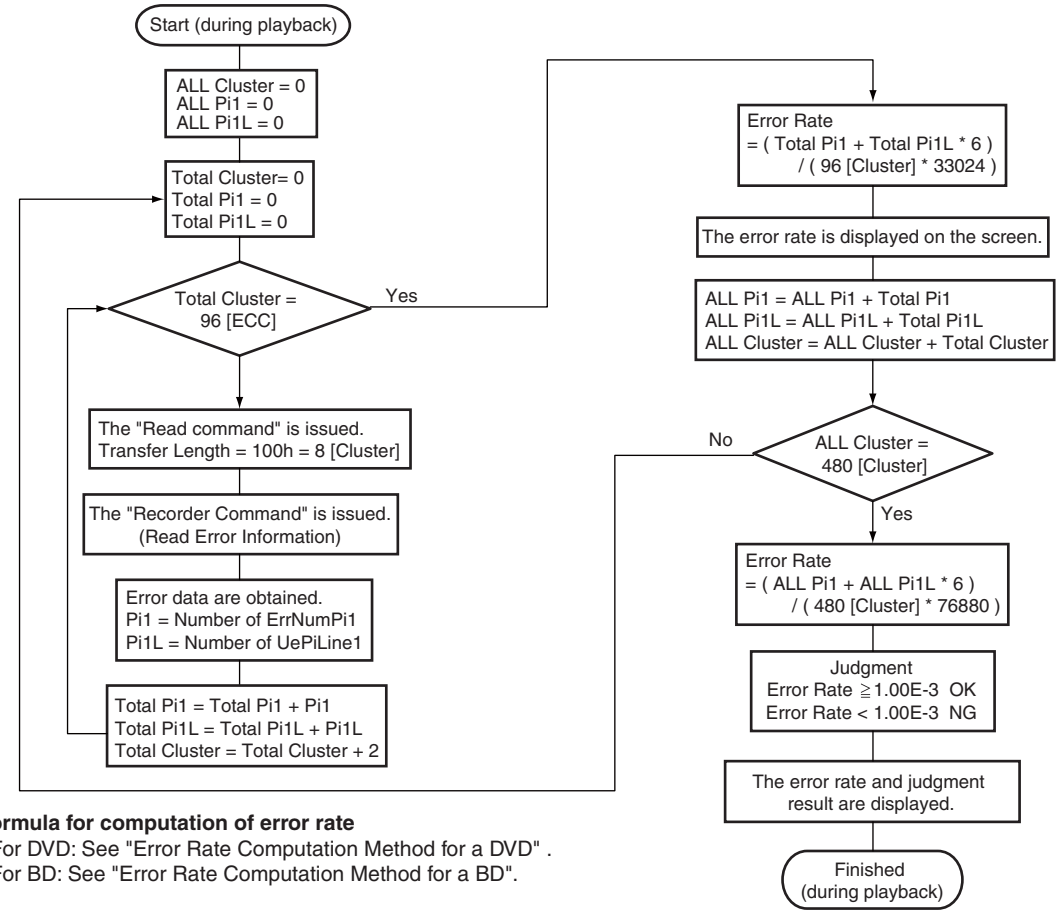
- For calculation of result judgment, the values of the above denominator groups will be multiplied by 5.
  The measurement result along with the judgment result will be displayed.
- During error rate measurement, there should not be any video or audio problem (stuttering block noise, jumpiness, etc.) in the playback signal.
- Data to be measured must be basically continuous.

Flowchart of DVD Error Rate Measurement (with OK/NG judgment)

Use the following flowchart just as a guide.


Start (during playback)
ALL ECC = 0
ALL Pi1 = 0
ALL Pi1L = 0
Total ECC = 0
Total Pi1 = 0
Total Pi1L = 0
Total ECC = 30 [ECC]
Yes
No
The "Read command" is issued.
Transfer Length = 20h = 2 [ECC]
The "Recorder Command" is issued.
(Read Error Information)
Error data are obtained.
Pi1 = Number of ErrNumPi1
Pi1L = Number of UePiLine1
Total Pi1 = Total Pi1 + Pi1
Total Pi1L = Total Pi1L + Pi1L
Total ECC = Total ECC + 2
Error Rate
= (Total Pi1 + Total Pi1L * 6)
/ (30 [ECC] * 33024)
The error rate is displayed on the screen.
ALL Pi1 = ALL Pi1 + Total Pi1
ALL Pi1L = ALL Pi1L + Total Pi1L
ALL ECC = ALL ECC + Total ECC
No
ALL ECC = 150 [ECC]
Yes
Error Rate
= (ALL Pi1 + ALL Pi1L * 6)
/ (150 [ECC] * 33024)
Judgment
Error Rate ≧1.00E-3 OK
Error Rate < 1.00E-3 NG
The error rate and judgment result are displayed.
Finished
(during playback)

Flowchart of BD Error Rate Measurement (with OK/NG judgment)


Start (during playback)
ALL Cluster = 0
ALL Pi1 = 0
ALL Pi1L = 0
Total Cluster= 0
Total Pi1 = 0
Total Pi1L = 0
Total Cluster = 96 [ECC]
Yes
No
The "Read command" is issued.
Transfer Length = 100h = 8 [Cluster]
The "Recorder Command" is issued.
(Read Error Information)
Error data are obtained.
Pi1 = Number of ErrNumPi1
Pi1L = Number of UePiLine1
Total Pi1 = Total Pi1 + Pi1
Total Pi1L = Total Pi1L + Pi1L
Total Cluster = Total Cluster + 2
Error Rate
= (Total Pi1 + Total Pi1L * 6)
/ (96 [Cluster] * 33024)
The error rate is displayed on the screen.
ALL Pi1 = ALL Pi1 + Total Pi1
ALL Pi1L = ALL Pi1L + Total Pi1L
ALL Cluster = ALL Cluster + Total Cluster
ALL Cluster = 480 [Cluster]
Yes
Error Rate
= (ALL Pi1 + ALL Pi1L * 6)
/ (480 [Cluster] * 76880)
Judgment
Error Rate ≧1.00E-3 OK
Error Rate < 1.00E-3 NG
The error rate and judgment result are displayed.
Finished (during playback)

Formula for computation of error rate

- For DVD: See "Error Rate Computation Method for a DVD" .
- For BD: See "Error Rate Computation Method for a BD".

Display Formats on the FL display and as an OSD

Operation	Display format	
	FL	OSD
Only during playback, if keys are pressed, calculation of error rate is started, and the results are displayed on the FL display and as an OSD. The symbol (-) (which indicates that measurement is not finished) flashes.	ER x.xE-x (At lights out) ER x.xE-x- (At lighting)	ERR RATE : x.xE-x (At lights out) ERR RATE : x.xE-x- (At lighting)
The result of measurement is displayed.		
If error rate measurement is completed before playback finishes, the average error rate, the symbol (*) (which indicates that the measurement is completed) and the judgment result (OK/NG) will be displayed on the FL and as an OSD. (When NG is displayed, if the tray is opened, the indications on the FL display and screen will be retained.)	ER x.xE-x*	ERR RATE : x.xE-* OK (NG: OSD whole screen display with red)
If error rate measurement is not completed before playback finishes, the average error rate, the symbol (-) (which indicates that measurement is not finished) and the judgment result (ERROR) that indicates that the error rate measurement has not been completed will be displayed on the FL display and as an OSD.	ER x.xE-x-	ERR RATE : x.xE-x- ERROR

* For details on the FL display, see "Specifications of Screen Display & FL Display."
* The layout for OSD depends on the mounting.
* "x.xE-X" in the above table indicates an error rate. E.g.: 3.5E-5 = $3.5X10^{-5}$

OK/NG judgment

Disc type	Reference value	Indication
DVD	$1.0x10^{-3}$	OK/NG
BD	$1.0x10^{-3}$	OK/NG
CD	No error rate measurement	

■ Specifications 2 for Error Rate Measurement (for continuous playback)

How to Start

To measure the error rate continuously, press the ESC, DISP, then 2 keys, in that order, only during playback. The result will be displayed as an OSD. The above keys can be accepted either in Normal Startup mode or Service mode.
* For details on key inputs, see also "3. Overview of Screen Shifting" of "Service Indication Screens."

[ERROR RATE MEASURING]

An error rate is measured during playback, and playback duration, title & chapter, address that is read, and error rate result are displayed as an OSD.
* For details on commands for the drive, see "Drive Command Specifications."

The measurement method is as follows:

1. Press the ESC, DISP, then 2 keys, in that order, to start measurement.
2. The displayed result is updated after each measurement session is performed.
3. To exit Error Rate Measurement mode, press the ESC key while error rate is being measured.

* During Stop mode, the on-screen display will remain displayed.

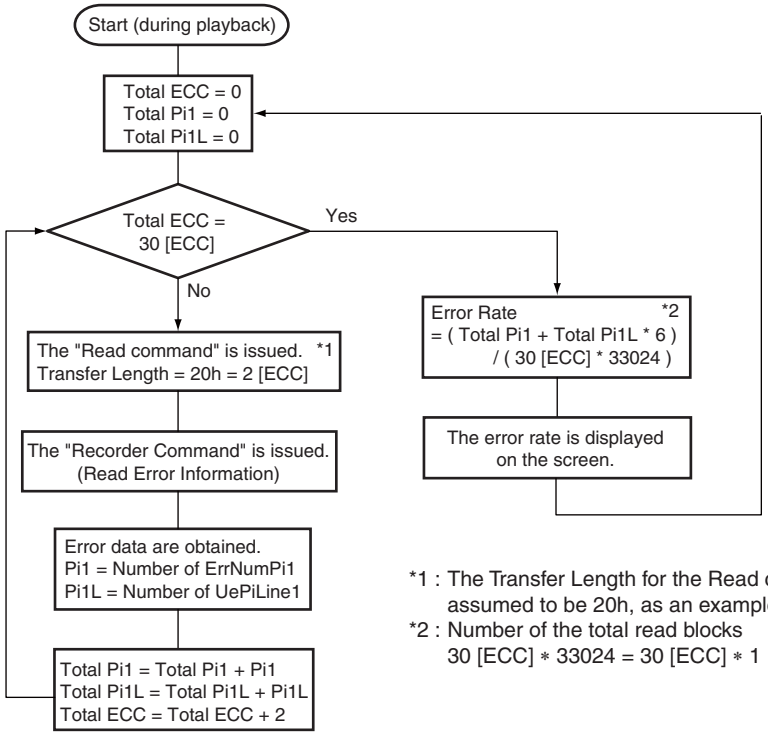
Operation Specifications

The following specifications must be met:

- When calculating an error rate, the denominator groups will be considered as shown below:
  For DVD: 28-32 ECCs (448-512 sectors)
  For BD: 95-105 clusters (3040-3360 sectors)
  Then the measurement result will be displayed.
- During error rate measurement, there should not be any video or audio problem (stuttering block noise, jumpiness, etc.) in the playback signal.
- Data to be measured must be basically continuous.

Flowchart of DVD Error Rate Measurement (continuous playback)

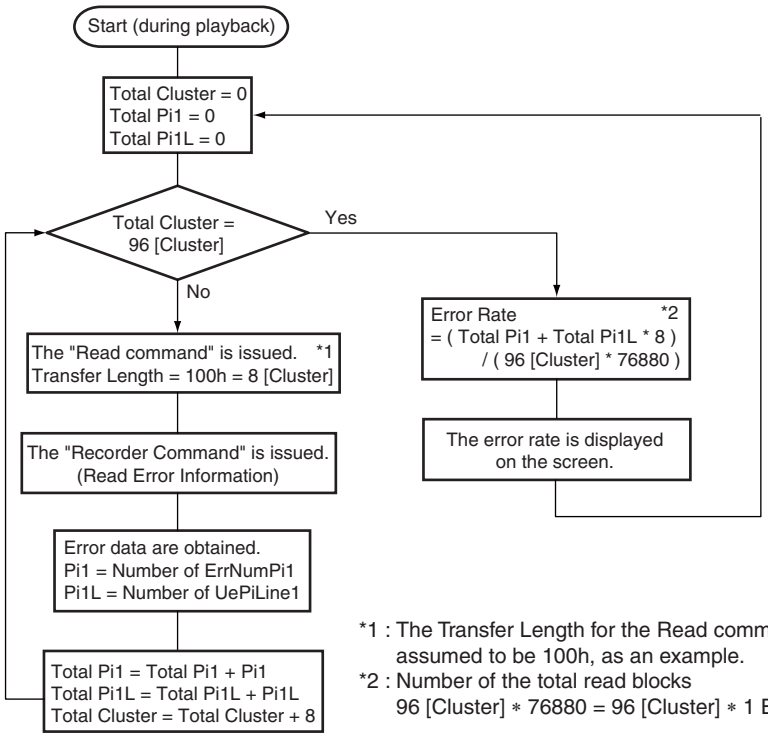
Use the following flowchart just as a guide.


Start (during playback)
Total ECC = 0
Total Pi1 = 0
Total Pi1L = 0
Total ECC = 30 [ECC]
Yes
No
The "Read command" is issued. *1
Transfer Length = 20h = 2 [ECC]
The "Recorder Command" is issued. (Read Error Information)
Error data are obtained.
Pi1 = Number of ErrNumPi1
Pi1L = Number of UePiLine1
Total Pi1 = Total Pi1 + Pi1
Total Pi1L = Total Pi1L + Pi1L
Total ECC = Total ECC + 2
Error Rate *2
= (Total Pi1 + Total Pi1L * 6)
/ (30 [ECC] * 33024)
The error rate is displayed on the screen.

*1 : The Transfer Length for the Read command in this flowchart is assumed to be 20h, as an example.
*2 : Number of the total read blocks
30 [ECC] ∗ 33024 = 30 [ECC] ∗ 1 ECC [172 bytes ∗ 192 rows]

Flowchart of BD Error Rate Measurement (continuous playback)

Use the following flowchart just as a guide.


Start (during playback)
Total Cluster = 0
Total Pi1 = 0
Total Pi1L = 0
Total Cluster = 96 [Cluster]
Yes
No
Error Rate *2
= (Total Pi1 + Total Pi1L * 8)
/ (96 [Cluster] * 76880)
The error rate is displayed on the screen.
The "Read command" is issued. *1
Transfer Length = 100h = 8 [Cluster]
The "Recorder Command" is issued.
(Read Error Information)
Error data are obtained.
Pi1 = Number of ErrNumPi1
Pi1L = Number of UePiLine1
Total Pi1 = Total Pi1 + Pi1
Total Pi1L = Total Pi1L + Pi1L
Total Cluster = Total Cluster + 8

*1 : The Transfer Length for the Read command in this flowchart is assumed to be 100h, as an example.

*2 : Number of the total read blocks
96 [Cluster] ∗ 76880 = 96 [Cluster] ∗ 1 ECC Cluster [155 columns ∗ 496 rows]

Formula for computation of error rate

- For DVD: See "Error Rate Computation Method for a DVD" .
- For BD: See "Error Rate Computation Method for a BD".

Display format of the OSD

①	②
TM : **h**m**s	TT : ***-***
③	④
LgcSct	ErrRate
********	*.**E-*
********	*.**E-*
********	*.**E-*
********	*.**E-*
********	*.**E-*
********	*.**E-*
********	*.**E-*
********	*.**E-*
********	*.**E-*
********	*.**E-*
********	*.**E-*

① Title & Chapter data: Title No. and Chapter No. of the title being played back
*For details on title & chapter display, see "Specifications of Screen Display and FL Display."

② Playback duration data: Elapsed time of the title being played back

③ LgcSct Address data: A logical sector address (Bytes 3-6 of Request Sense Standard Data [Information]) at the start point of error rate measurement is displayed.

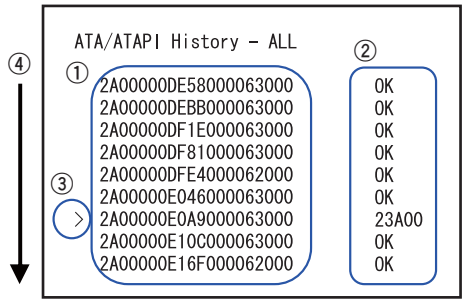
④ Error rate data: Measured error rate value

* Error rate values are displayed endlessly as far as playback is performed.

■ ATA/ATAPI DEBUG OSD

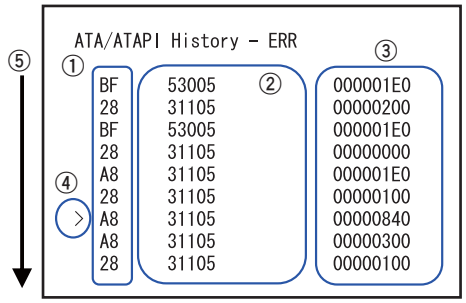
Press the ESC, DISP, then 3 keys, in that order, to display the 1st screen for ATA/ATAPI DEBUG OSD.
Then press the DIG/ANA key to switch screens.

• 1st screen (ATA/ATAPI DEBUG OSD-Command history [ALL])



① Packet commands from the host (10 Bytes from the beginning are displayed.)
② Error data for the corresponding packet commands in the Status register
If the error bit is 0: OK
If the error bit is 1: Error code (Sense key, ASC, ASCQ)
③ This indicates the latest command log.
④ The first 9 command logs are listed, in descending order.
If the number of logs exceeds 9, the subsequent log will overwrite the oldest (uppermost) log, and the same will follow as the logs are added.

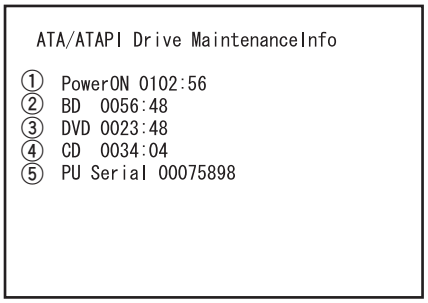
• 2nd screen (ATA/ATAPI DEBUG OSD-Command history [ERROR])



① The beginning (1 byte) of the packet command that was failed is indicated.
② Error code (Sense key, ASC, ASCQ)
③ The command-specific information (4 bytes) that was acquired by the Request Sense command is displayed.
④ This indicates the latest command log.
⑤ The first 9 command logs are listed, in descending order.
If the number of logs exceeds 9, the subsequent log will overwrite the oldest (uppermost) log, and the same will follow as the logs are added.

The error log for the Test Unit Ready command will not be displayed as a command log.

• 3rd screen (ATA/ATAPI DEBUG OSD-Drive maintenance data)



① Accumulated power-on duration
② LD read power-on duration for the BD
③ LD read power-on duration for the DVD.
④ LD read power-on duration for the CD.
⑤ Serial No. of the PU

The power-on duration and error logs that the writer manages are displayed.
To update the display, press the SEARCH key of the remote control unit for service while this screen is being displayed.

[How to acquire various data]

• Commands for acquiring various durations of the drive

Use the LogSense command.

If "PKT:4D 00 70 00 00 00 00 00 20 00 00 00" is issued, the following data are stored in the Read buffer:

<How to read the data in the Read buffer>

Accumulated power-on duration of the drive : data [8]-[11] (Most Significant Byte: data [8], Least Significant Byte: data [11])
LD read power-on duration for the DVD : data [12]-[15] (Most Significant Byte: data [12], Least Significant Byte: data [15])
LD read power-on duration for the CD : data [20]-[23] (Most Significant Byte: data [20], Least Significant Byte: data [23])
LD read power-on duration for the BD : data [28]-[31] (Most Significant Byte: data [28], Least Significant Byte: data [31])
The unit for accumulated power-on duration is 2 minutes.
The format for duration indication is "hours:minutes."

• Commands for acquiring the PU serial No.

Use the "Read Buffer" command.

If "PKT:3c 02 A0 00 ** ** 00 00 02 00 00" (** **: Read address) is issued, part of the PU serial number can be confirmed at data [0]/data [1] of the Read buffer. (Most Significant Byte: data [1], Least Significant Byte: data [0])

Enter the following address in the read address (** **) to acquire drive serial data:

	Most Significant	Least Significant
Read address:	0x104,	0x106

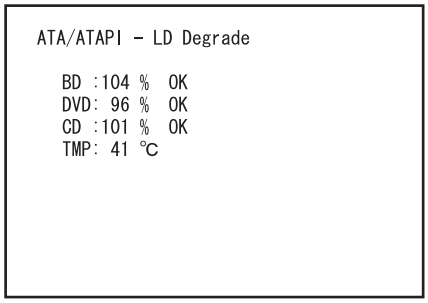
Display the acquired serial No. in decimal notation.

[E.g.]
Acquiring data for 0x104:
PKT:3c 02 A0 00 01 04 00 00 02 00 00 00
data[1] = 0x00 , data[0] = 0x01

Acquiring data for 0x106:
PKT:3c 02 A0 00 01 06 00 00 02 00 00 00
data[1] = 0x28 , data[0] = 0x7A

PU serial No.: 0x0001287A —> 00075898

• 4th screen (ATA/ATAPI DEBUG OSD-Judgment of degradation of LDs)



It is indicated to what extent the LDs (for BD, DVD, and CD) of the drive have degraded. To update the on-screen data, press the SEARCH key on the remote control unit for service while this screen is displayed. For details on the display content and updating conditions, see Table 1 below:

Table 1: Display content and updating conditions

Display Item	Display Content	Conditions for updating on-screen data by pressing the SEARCH key
BD	Judgment of degradation of the LD for BD. NG with a rate of 120% or higher	No disc in the disc tray
DVD	Judgment of degradation of the LD for DVD. NG with a rate of 120% or higher	No disc in the disc tray
CD	Judgment of degradation of the LD for CD. NG with a rate of 120% or higher	No disc in the disc tray
TMP	Current temperature inside the writer	No disc in the disc tray

[How to acquire various data]

• Command for measuring the LD degradation rate

Use the Write Buffer command.
After entering btr[0] = 99 and btr[1] = 50 to the Write Buffer,
issue the "PKT:3b 02 e1 00 00 00 00 00 20 00 00 00" packet command.

• Command for acquiring the LD degradation rate

Use the Read Buffer command.
When the "PKT:3c 02 e1 00 00 00 00 00 20 00 00 00" is issued, the following data are stored in the Read Buffer.

<How to read the Read Buffer>

CD degradation rate (%) : data[15]/data[16] (Most Significant Byte: data[15], Least Significant Byte: data[16])
DVD degradation rate (%) : data[3]/data[4] (Most Significant Byte: data[3], Least Significant Byte: data[4])
BD degradation rate (%) : data[5]/data[6] (Most Significant Byte: data[5], Least Significant Byte: data[6])
Current temperature : data[7]/data[8] (Most Significant Byte: data[7], Least Significant Byte: data[8])
Temperature at the time of CD adjustment : data[17]/data[18] (Most Significant Byte: data[17], Least Significant Byte: data[18])
Temperature at the time of DVD adjustment : data[11]/data[12] (Most Significant Byte: data[11], Least Significant Byte: data[12])
Temperature at the time of BD adjustment : data[13]/data[14] (Most Significant Byte: data[13], Least Significant Byte: data[14])

Temperature (ºC) = Acquired temperature value x 0.25
Example: When the acquired temperature value is 64h: Temperature = 64h x 0.25 = 25 (ºC)

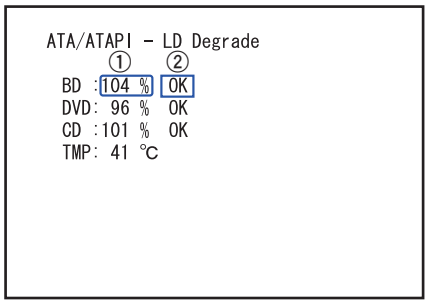
The value for the LD degradation rate is that before correction. Perform temperature correction.

• On temperature correction coefficien

CD 6%/10ºC, DVD 8%/10ºC, BD 10%/10ºC

<How to correct the temperature>

BD

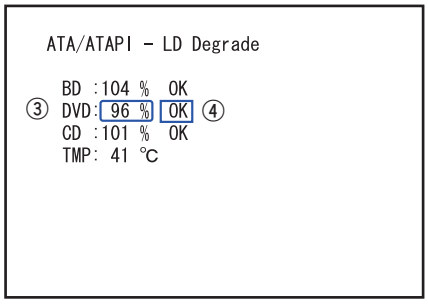


$$\text{Coefficient A} = 1 + \frac{\text{Current temperature - Temperature at the time of BD adjustment}}{10} \times 0.1$$

Current temperature: To be acquired with the Read Buffer command (data[7]/data[8] × 0.25)
Temperature at the time of BD adjustment: To be acquired with the Read Buffer command (data[13]/data[14] × 0.25)
0.1 : BD temperature correction coefficient

① Degradation rate of the LD for BD = Degradation rate of BD/Coefficient A
Degradation rate of BD: To be acquired with the Read Buffer command (data[5]/data[6])
② OK/NG indication
OK: When the degradation rate of the LD for BD is less than 120%.
NG: When the degradation rate of the LD for BD is 120% or higher.

DVD

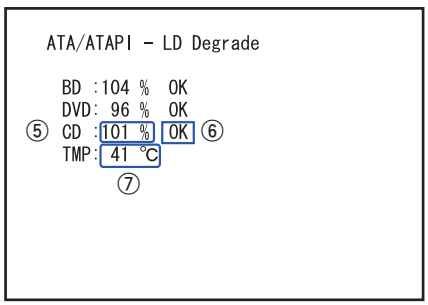


$$\text{Coefficient B} = 1 + \frac{\text{Current temperature - Temperature at the time of BD adjustment}}{10} \times 0.08$$

Current temperature: To be acquired with the Read Buffer command (data[7]/data[8] × 0.25)
Temperature at the time of DVD adjustment: To be acquired with the Read Buffer command (data[11]/data[12] × 0.25)
0.08 : DVD temperature correction coefficient

③ Degradation rate of the LD for DVD = Degradation rate of DVD/Coefficient B
Degradation rate of DVD: To be acquired with the Read Buffer command (data[3]/data[4])
④ OK/NG indication
OK: When the degradation rate of the LD for DVD is less than 120%.
NG: When the degradation rate of the LD for DVD is 120% or higher.

CD



$$\text{Coefficient C} = 1 + \frac{\text{Current temperature - Temperature at the time of BD adjustment}}{10} \times 0.06$$

Current temperature: To be acquired with the Read Buffer command (data[7]/data[8] × 0.25)
Temperature at the time of CD adjustment: To be acquired with the Read Buffer command (data[17]/data[18] × 0.25)
0.06 : CD temperature correction coefficient

⑤ Degradation rate of the LD for CD = Degradation rate of CD/Coefficient C
Degradation rate of CD: To be acquired with the Read Buffer command (data[15]/data[16])
⑥ OK/NG indication
OK: When the degradation rate of the LD for CD is less than 120%.
NG: When the degradation rate of the LD for CD is 120% or higher.
⑦ Current temperature: To be acquired with the Read Buffer command (data[7]/data[8])

■ Indications for the Results of Self-Diagnosis

Self-diagnosis is performed upon startup of the product, and the results are displayed as shown below.
For details on operation and description of the self-diagnosis function, see the specifications of "Self-Diagnosis Function."

• Specifications of indications for the results of self-diagnosis

```
Result of Self-Diagnostic
①   SKY Chip Info       : 2.00
②   HDMI Transmitter    : OK
③   SUBCON              : OK
④   PLL Synthesizer     : OK
⑤   DRIVE               : PIONEER BD-RW BDV-102X OK
```

① SKY Chip Info: Version and revision Nos. of the SKY Chip
② HDMI Transmitter: Result of checking communications with the SII9134CTU
③ SUBCON: Result of checking communications with the LC87F5932A
④ PLL Synthesizer: Result of checking communications with the CDCE906
⑤ DRIVE: Result of checking communications with the BD drive

7. DISASSEMBLY

Note 1: Do NOT look directly into the pickup lens. The laser beam may cause eye injury.
Note 2: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Diagnosis of PCB's

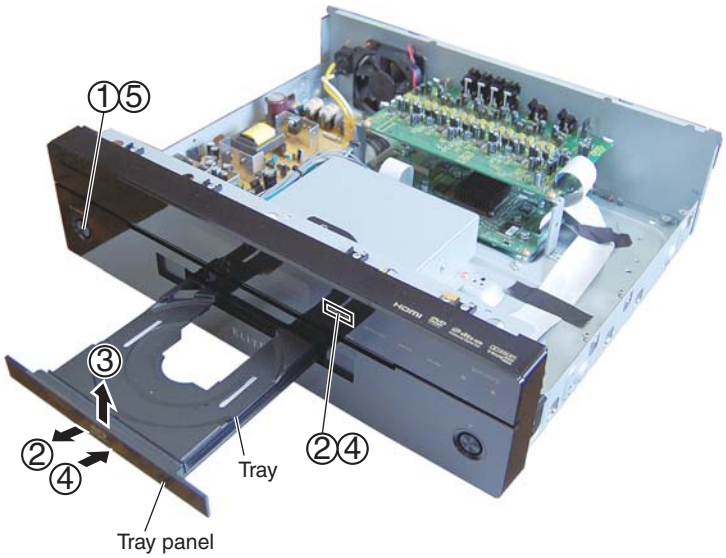
1 Bonnet Case S and Tray Panel

● **Bonnet case S**

❶ Remove the eight screws.
❷ Remove the bonnet case S.

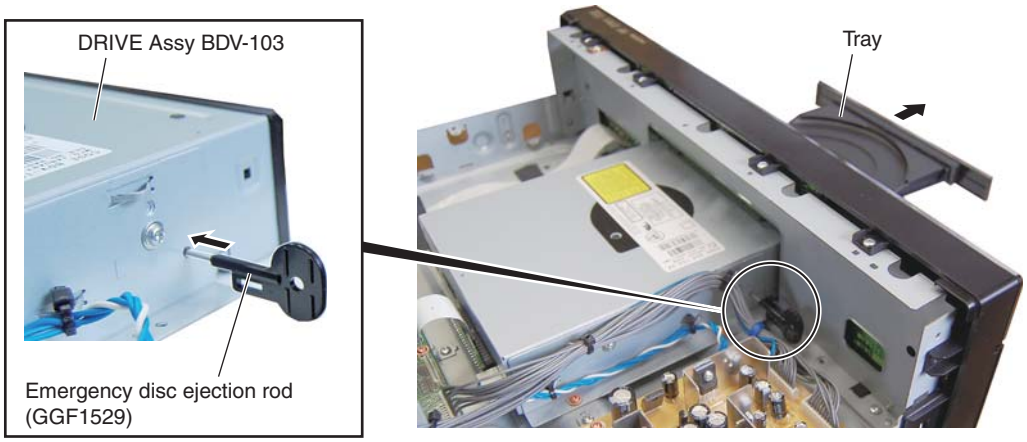
● **Tray panel**

① Press the ⏻ STANDBY/ON button to turn on the power.
② Press the ⏏ OPEN/CLOSE button to open the tray.
③ Remove the tray panel.
④ Press the ⏏ OPEN/CLOSE button to close the tray.
⑤ Press the ⏻ STANDBY/ON button to turn off the power.



● **How to open the tray when the power cannot be turned on**

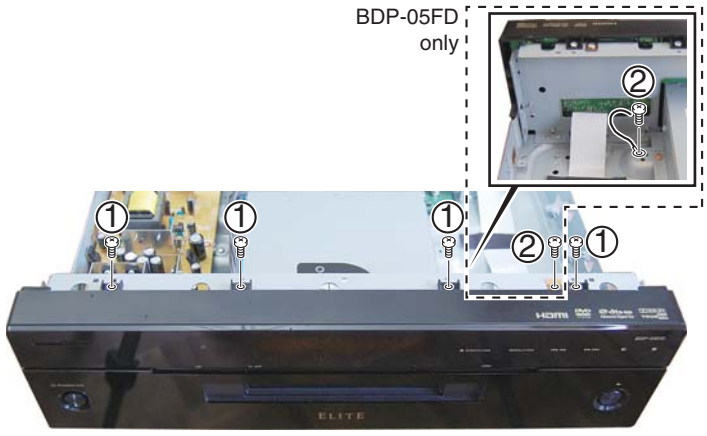
When the tray cannot be opened because the power cannot be turned on, it can be opened using the emergency disc ejection rod (GGF1529). (A long, thin rod about 1 mm in diameter can be used in place of the rod.)



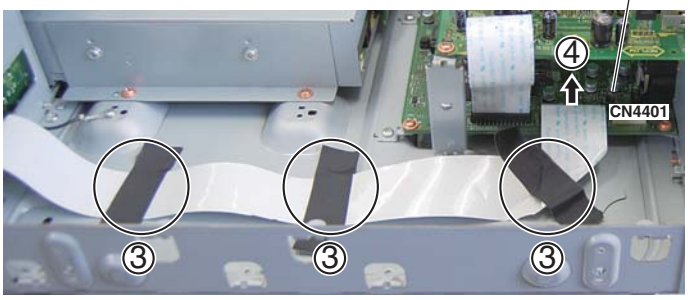
BDP-05FD

2 Front Panel Section

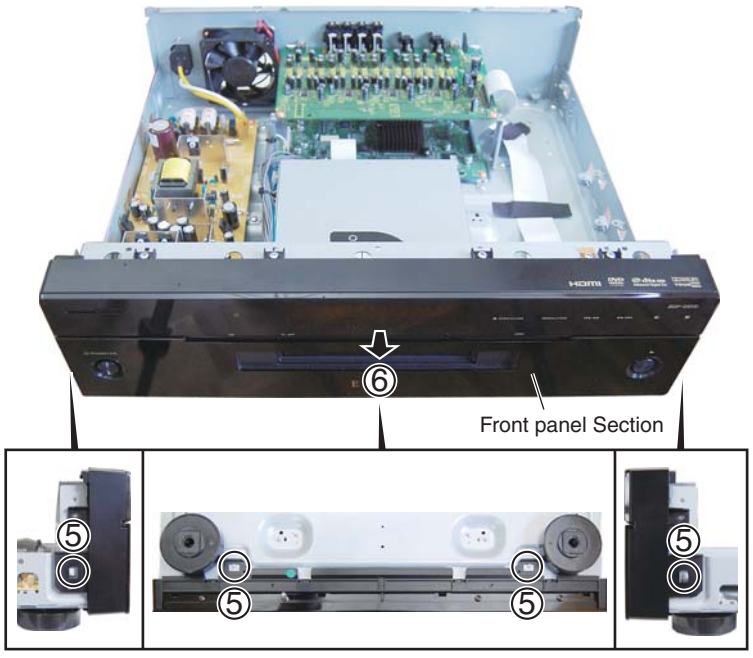
① Remove the four screws.
② Remove the two screws. (BDP-05FD only)



③ Remove the three tapes.
④ Disconnect the one flexible cable.



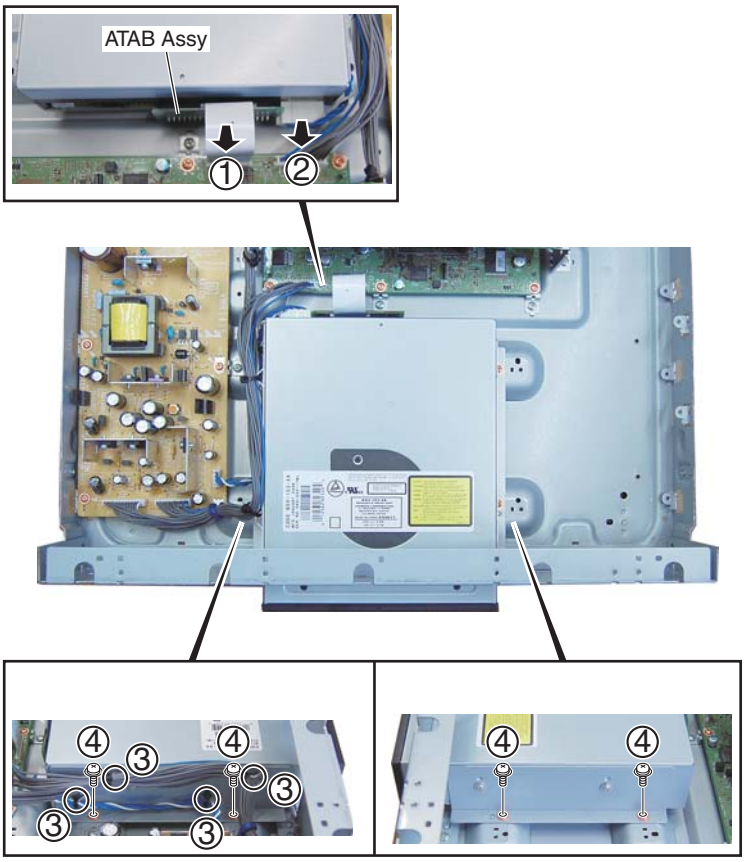
⑤ Unhook the four hooks.
⑥ Remove the front panel Section.



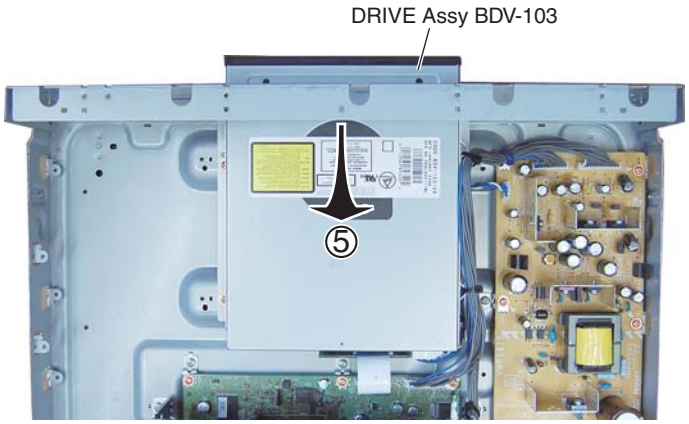
BDP-05FD

3 DRIVE Assy BDV-103

① Remove the ATAB Assy.
② Remove the one connector.
③ Release the jumper wires.
④ Remove the four screws.



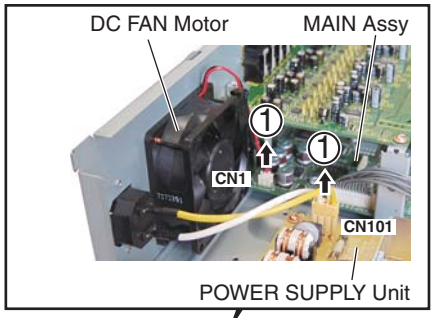
⑤ Remove DRIVE Assy BDV-103.

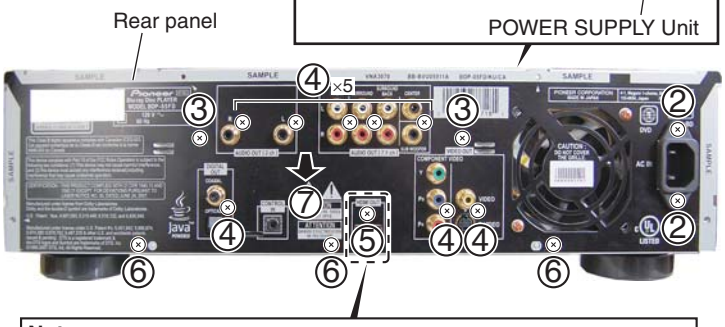


BDP-05FD

4 Rear Panel

① Disconnect the two connectors.
② Remove the two screws.
③ Remove the two screws.
④ Remove the eight screws.
⑤ Remove the one screw.
⑥ Remove the three screws.
⑦ Remove the rear panel.

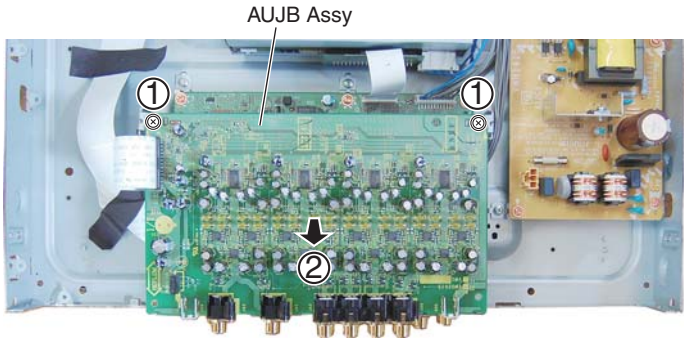




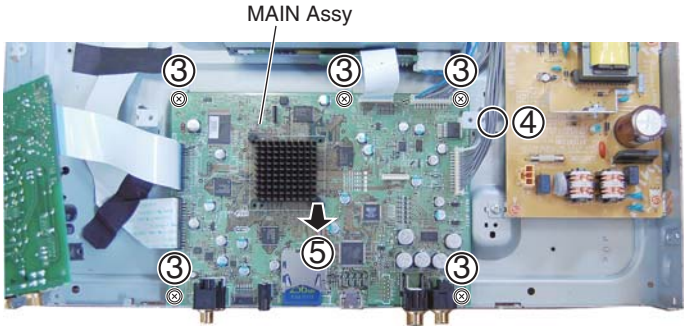
Note:
Do not use an electric screwdriver.
If the screw is over-tightened, the screw thread may be damaged.

5 AUJB and MAIN Assys

① Remove the two screws.
② Remove the AUJB Assy.



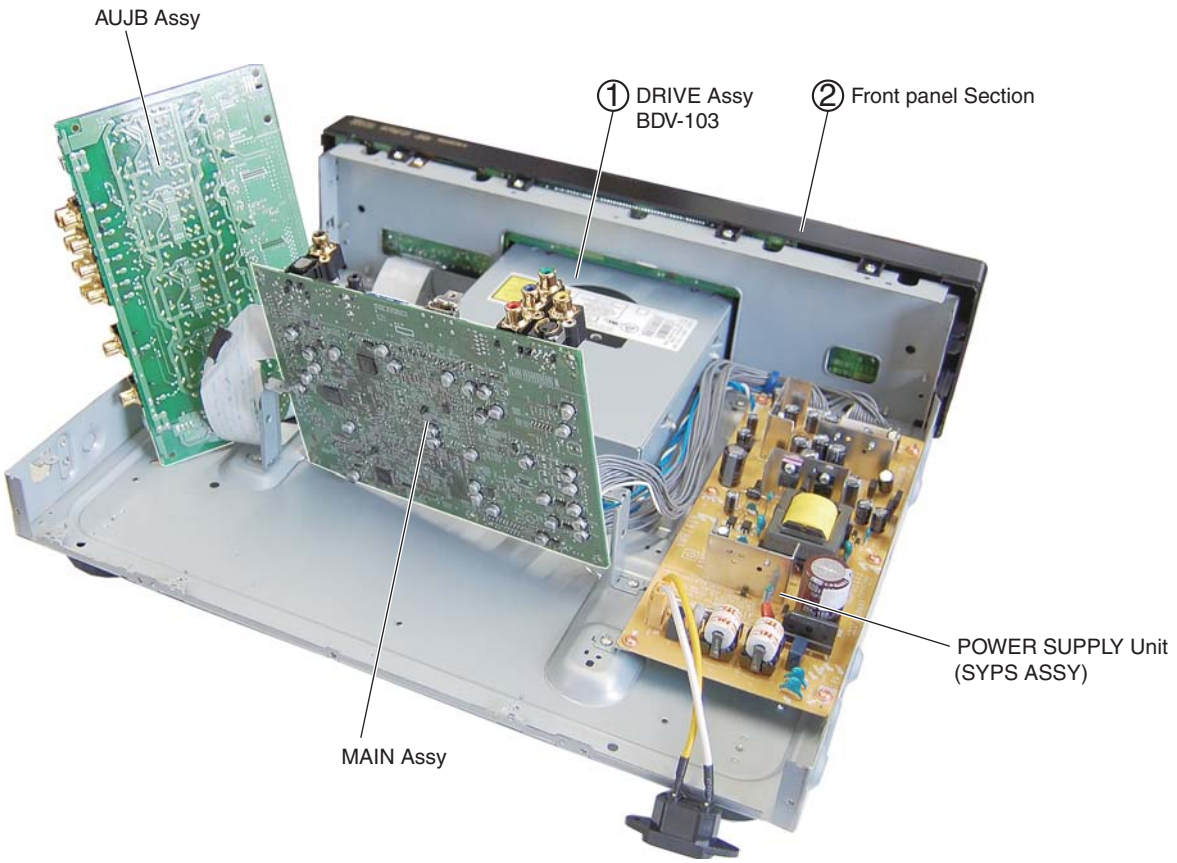
③ Remove the five screws.
④ Release the jumper wire.
⑤ Remove the MAIN Assy.



6 Diagnosis

① Reassembling the DRIVE Assy BDV-103.
② Reassembling the front panel Section.
③ Arrange the unit as shown in the photo below.

Diagnosis

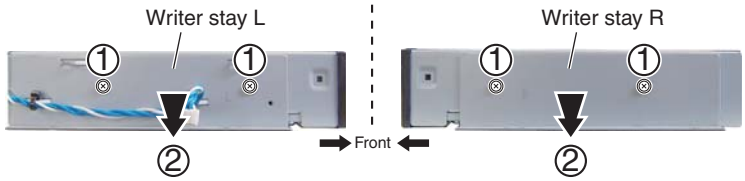


Cleaning the Pickup Lens

● Writer stay L and R

① Remove the four screws.

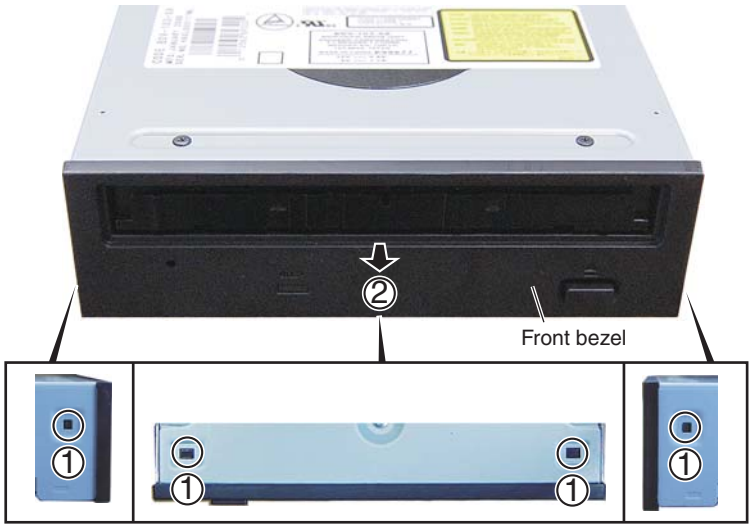
② Remove the writer stays L and R.



● Front bezel

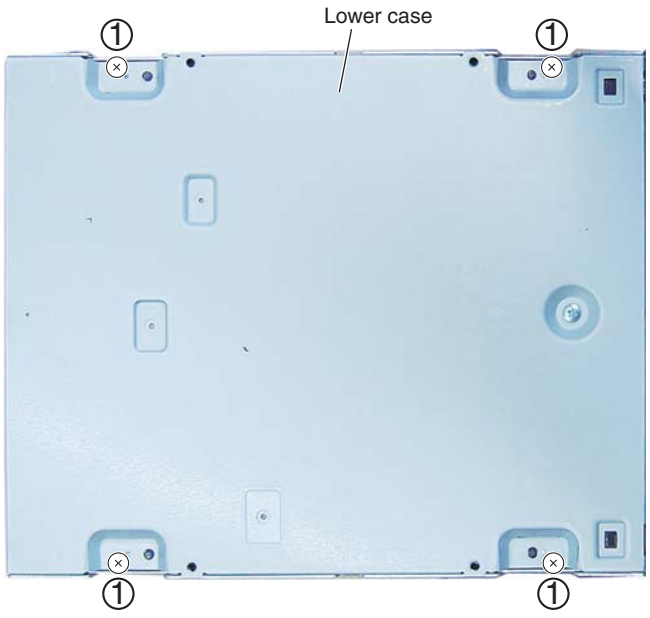
① Unhook the four hooks.

② Remove the front bezel.

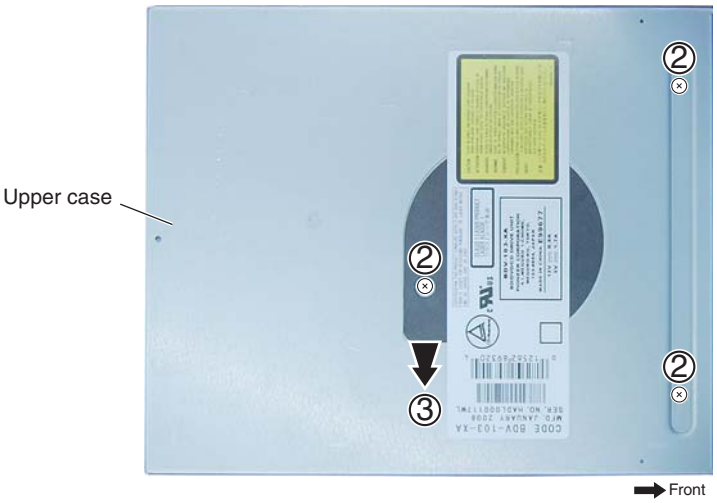


● Upper case

① Remove the four screws.

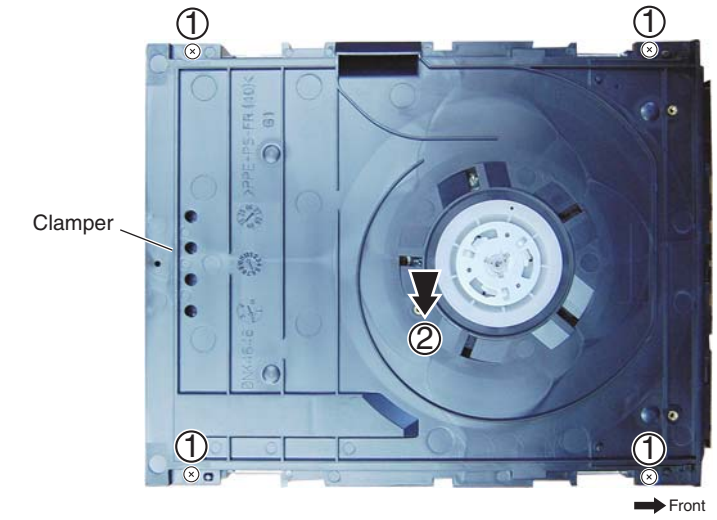


② Remove the three screws.
③ Remove the upper case.



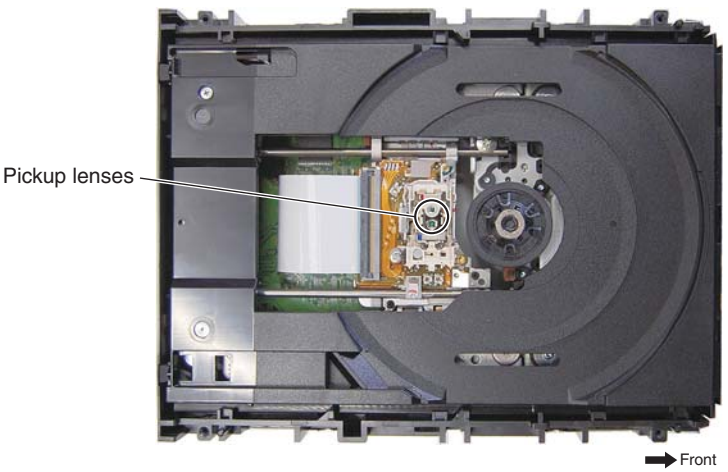
● Clamper

① Remove the four screws.
② Remove the clamper.



Before shipment, be sure to clean the pickup lenses, using the following cleaning materials:

Cleaning liquid : GEM1004
Cleaning paper : GED-008



8. EACH SETTING AND ADJUSTMENT

8.1 NECESSARY ADJUSTMENT POINTS

When	Adjustment Points

■ Exchange Parts of Mechanism Assy

When	Adjustment Points	
Exchange the DRIVE ASSY	Mechanical point	● None
	Electric point	● ID NUMBER and DATA SETTING ● FIRMWARE UPDATE

■ Exchange PCB Assy

When	Adjustment Points	
Exchange MAIN ASSY	Mechanical point	● None
	Electric point	● MODEL SETTING ● ID NUMBER and DATA SETTING ● FIRMWARE UPDATE

8.2 MODEL SETTING

■ Destination Setting Screen

```
[Check Mode for Model Setting]
Input the number using the remote for Service.

> ----                                  SIDE-A: PREV PAGE
                                        SIDE-B: NEXT PAGE

Input No.   Model                  Input No.   Model
[ 0101  :  BDP-LX71/WY5      ]   [ 0109  :  BDP-LX71/TA5      ]
[ 0102  :  BDP-LX71/WV5      ]   [ 0110  :  BDP-51FD/WPW      ]
[ 0103  :  BDP-LX71/WS5      ]   [ 0111  :  BDP-51FD/TL       ]
[ 0104  :  BDP-05FD/KU/CA    ]   [ 0112  :  BDP-LX08/WV5      ]
[ 0105  :  BDP-51FD/KU/CA    ]   [ 0113  :  BDP-LX08/WY5      ]
[ 0106  :  BDP-LX71/JJ       ]   [ 0114  :  BDP-LX08/WY5/RE   ]
[ 0107  :  BDP-LX71/TL       ]   [ 0115  :  SBDP-LX08/WYV5    ]
[ 0108  :  BDP-LX71/WPW      ]   [ 0116  :  SBDP-LX08/WYV5/RE]
```

Fig. 1: Screen image 1

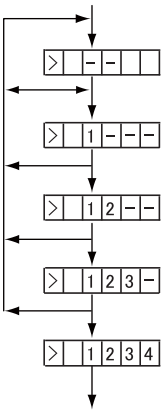
- The screen for setting the destination region will be analogous to the screen shown in Fig. 1.
- A proportional font will be used.
- Entering a 4-digit number is possible with the remote control unit for service (Fig. 2).
- To shift to the next page, the SIDE-B key is used. When this key is pressed while the last page is displayed, Page 1 will be displayed.
- To shift to the previous page, the SIDE-A key is used. When this key is pressed while Page 1 is being displayed, the last page will be displayed.
  The input numbers and model names will be changed when pages are changed (Fig. 3).
  Other indications and operations are common to all pages.
- If there are several pages, any destination number will be accepted regardless of the currently displayed page.
- To exit the Destination Setting screen, press the ESC key.

• On input keys

Key	Operation
Keys 0-9 on the remote control unit for service	For inputting numerics.
CLEAR key on the remote control unit for service	For canceling input numerics and returning to the initial display.

Keys other than those mentioned above will not be accepted.

- Once all 4 digits are input, that number is set.
  -> If a number corresponding to the input number does not exist, the error message will be displayed. (Fig. 4)
  -> After the error message is displayed, no key input will be accepted. (Unplug the power cord.)
- The first input numeric is displayed at the rightmost position then will be shifted to the left with subsequent key inputs, as shown below:



No input
A "1" is input. (Even if a nonvalid numeric is input, the error message will not be displayed at this stage.)

A "2" is input. (Even if a nonvalid numeric is input, the error message will not be displayed at this stage.)
When the CLEAR key is pressed, the screen will return to the initial display.

A "3" is input. (Even if a nonvalid numeric is input, the error message will not be displayed at this stage.)
When the CLEAR key is pressed, the screen will return to the initial display.

A "4" is input. (If the input 4-digit number is not a valid number, "> 1234" is instantly [0.2 sec] displayed.
Then an error message will be displayed.)
When the CLEAR key is pressed, the screen will return to the initial display.

The above "> 1234" is instantly (0.2 sec) displayed
then the Model Setting screen will be cleared.

- To correct the input data, press the CLEAR key on the remote control unit for service.
  All the input numerics will be cleared.

• **On the model indications**
  • The model number then the destination are indicated in the Model column.
  • A full model number is indicated (16 one-byte characters at maximum).
  • The model numbers and destinations are displayed in alphabetical and ascending numeric orders, from the top line in the left column.

  • If the corresponding number exists:
    -> The model and region numbers are displayed for 2 sec. (Fig. 5)
    -> Then the unit will be turned off.

• **FL display**

While the Model Setting screen is displayed:

M	O	D	E	L		S	E	T	

If the input model number exists:

M	O	D	E	L		O	K		

(After this indication is displayed for 2 sec, the unit is turned off.)

If the input model number does not exist:

M	O	D	E	L		E	R	R	

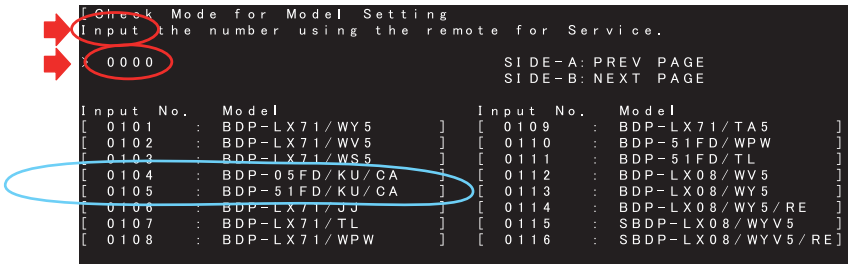

[Check Mode for Model Setting
Input the number using the remote for Service.
> 0000
SIDE-A: PREV PAGE
SIDE-B: NEXT PAGE
Input No. Model
[0101 : BDP-LX71/WY5]
[0102 : BDP-LX71/WV5]
[0103 : BDP-LX71/WS5]
[0104 : BDP-05FD/KU/CA]
[0105 : BDP-51FD/KU/CA]
[0106 : BDP-LX71/JJ]
[0107 : BDP-LX71/TL]
[0108 : BDP-LX71/WPW]
Input No. Model
[0109 : BDP-LX71/TA5]
[0110 : BDP-51FD/WPW]
[0111 : BDP-51FD/TL]
[0112 : BDP-LX08/WV5]
[0113 : BDP-LX08/WY5]
[0114 : BDP-LX08/WY5/RE]
[0115 : SBDP-LX08/WYV5]
[0116 : SBDP-LX08/WYV5/RE]

Fig. 2: Screen image 2

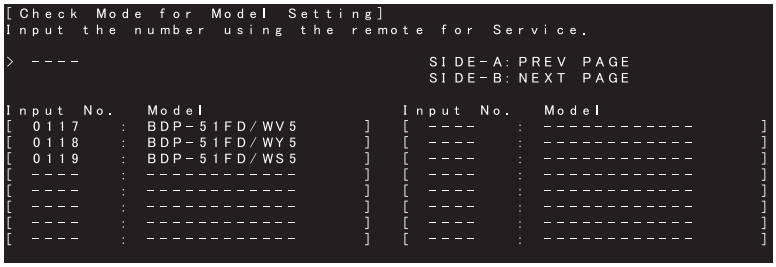

[Check Mode for Model Setting]
Input the number using the remote for Service.
> ----
SIDE-A: PREV PAGE
SIDE-B: NEXT PAGE
Input No. Model
[0117 : BDP-51FD/WV5]
[0118 : BDP-51FD/WY5]
[0119 : BDP-51FD/WS5]
Input No. Model
[---- : ----------]

Fig. 3: Screen image 3

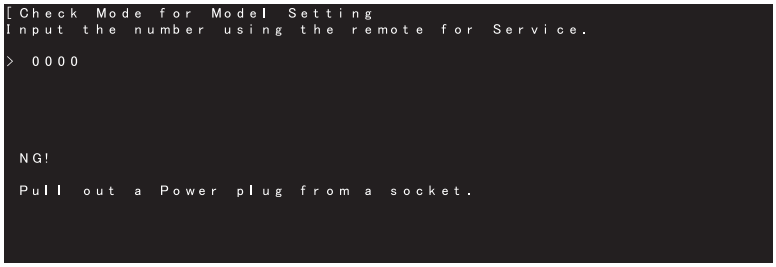


Fig. 4: Screen image 4

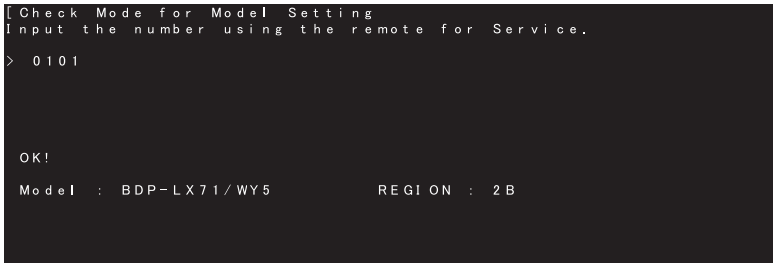


Fig. 5: Screen image 5

8.3 CPRM ID NUMBER AND DATA SETTING

[Purposes]

- An individual ID number and ID data (AACS, CPRM, BD+, Windows Media DRM, and MAC address) must be input at the same time. All data are determined according to the data on the ID data disc. If the number and data are not set correctly with the following procedure, the unit does not work properly. You will find the ID number to be labeled on the rear panel.

This setting is Necessary When:

- When the DRIVE Assy or MAIN Assy is replaced.

[Tools to be used]

Remote control unit for servicing
(GGF1067)

ID Disc for Blu-ray Player Type 2 Vol 1.0
(GGV1324)

[Notes]

Important: If no ID label is found on the rear panel, write down the specified ID number by checking it on the version check screen ([ESC] + [DISP]).

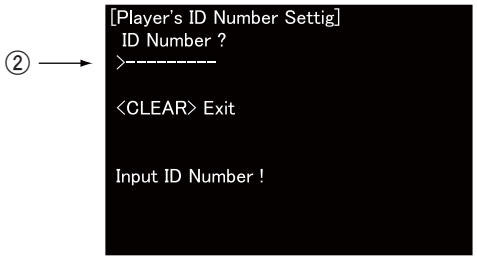
- Input the ID number while the unit is in Stop mode.
- After the data are read from the ID data disc, the disc will automatically be unloaded.
- Each time a key input succeeds, the screen background becomes blue. If a key input fails, the screen background becomes red.

■ CPRM ID Registration Mode

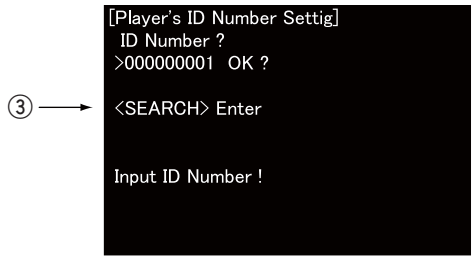
• Conditions for entering CPRM ID Registration mode
During Playback Stop mode, press the ESC then STEREO keys.
The above key inputs are accepted only during Normal Playback Stop mode.

• Conditions for exiting CPRM ID Registration mode
Press the CLEAR key to return to Normal mode.

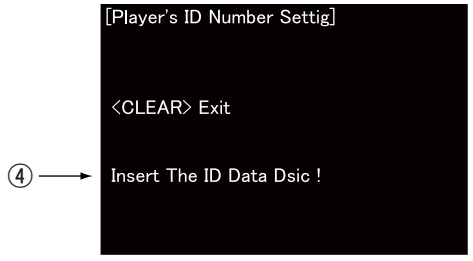
• How to input the ID No. and ID data
① To enter Input mode, press the ESC then STEREO keys.
② After entering Input mode, input a 9-digit ID No.
(The number is displayed on the FL display.)
The ID No. is described on the ID label located on the rear panel of the product.



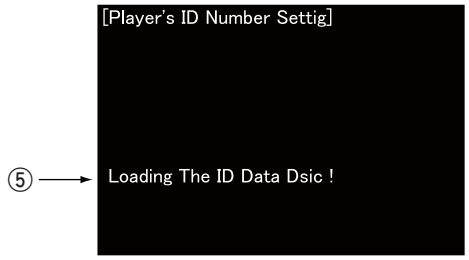
③ After the 9-digit ID No. is input, the SEARCH key will be accepted. If it is pressed, the ID No. will be displayed.



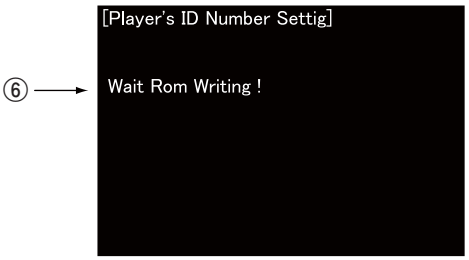
④ After the ID No. is set, the unit awaits ID data input.
("INSERT ID DATA" is displayed on the FL display.)
Load the ID data disc in the disc tray. As soon as the tray is closed, reading of the data will start.



⑤ During data reading, the indications below will be displayed. ("LOAD ID DATA" is displayed on the FL display.)



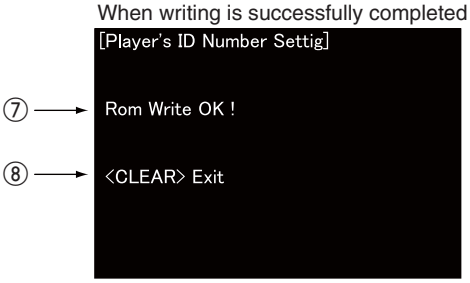
⑥ After reading of the ID data is completed, writing of the data on the flash ROM will start. ("WRITE ID DATA" is displayed on the FL display.)



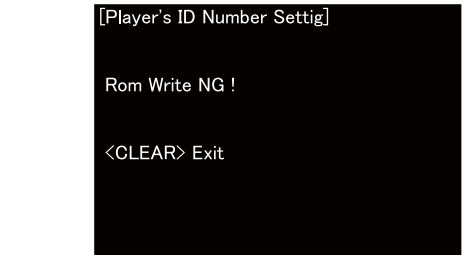
⑦ Upon completion of writing on the flash ROM, "Rom Write OK!" will be displayed. ("ID DATA OK" will be displayed on the FL display.)
The background color of the screen will change to blue when writing of various key data is successfully completed. If writing fails, the background color will change to red.

⑧ Upon completion of writing, press the CLEAR key to exit Input mode.

When writing is successfully completed



When writing fails

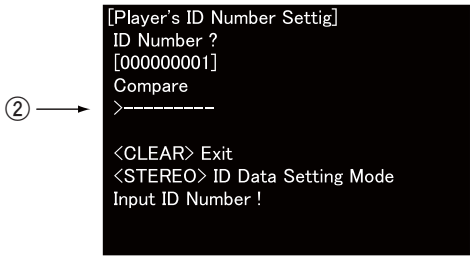


■ CPRM ID Registration Mode 2

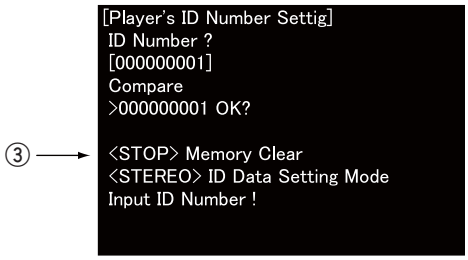
• How to clear the ID No.

① With the ID No. set, press the ESC then STEREO keys.

② Input the same number as the set ID No.



③ Press the STOP key after the 9-digit number is input. Only when the input number and the set number coincide, the set ID No. will be erased, and the unit will exit this mode.
If the numbers do not coincide, the screen will return to that in Step ②.
(The STOP key is not accepted after input of a 9-digit number is finished.)



• Example of the FL display during numeric input for the ID No.

When the numerics 0, 1, and 2 are input, in that order:
[012]

* If an ID No. is already registered, the registered ID No. is displayed before you enter any numeric. (The registered ID No. also remains displayed when a wrong ID No. is input [NG].)

Before any numeric is input (registered ID: 012345678)
[012345678]

When the first digit (0) is input
[0]

8.4 FIRMWARE UPDATE

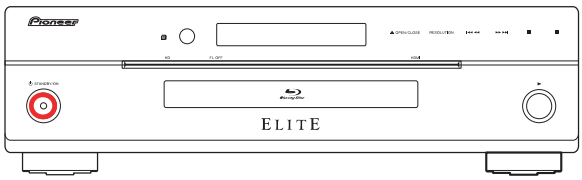
UPDATE PROCEDURE

1. Plug a power cable into the unit.
2. Press the "STANDBY/ON" button to switch the unit on.
3. Press the "OPEN/CLOSE" button to open the disctray.
4. Place an UPDATE disc on the tray.
5. Press the "OPEN/CLOSE" button on the front panel to begin the application update.

   * FL display indicates "DL OK" and the unitauto matically switches into standby with the tray opening.

   * The update time takes 5 to 25 minutes, it changes depending on the version.

DO NOT unplug the power cable or press the standby button until the unit switches into standby mode.

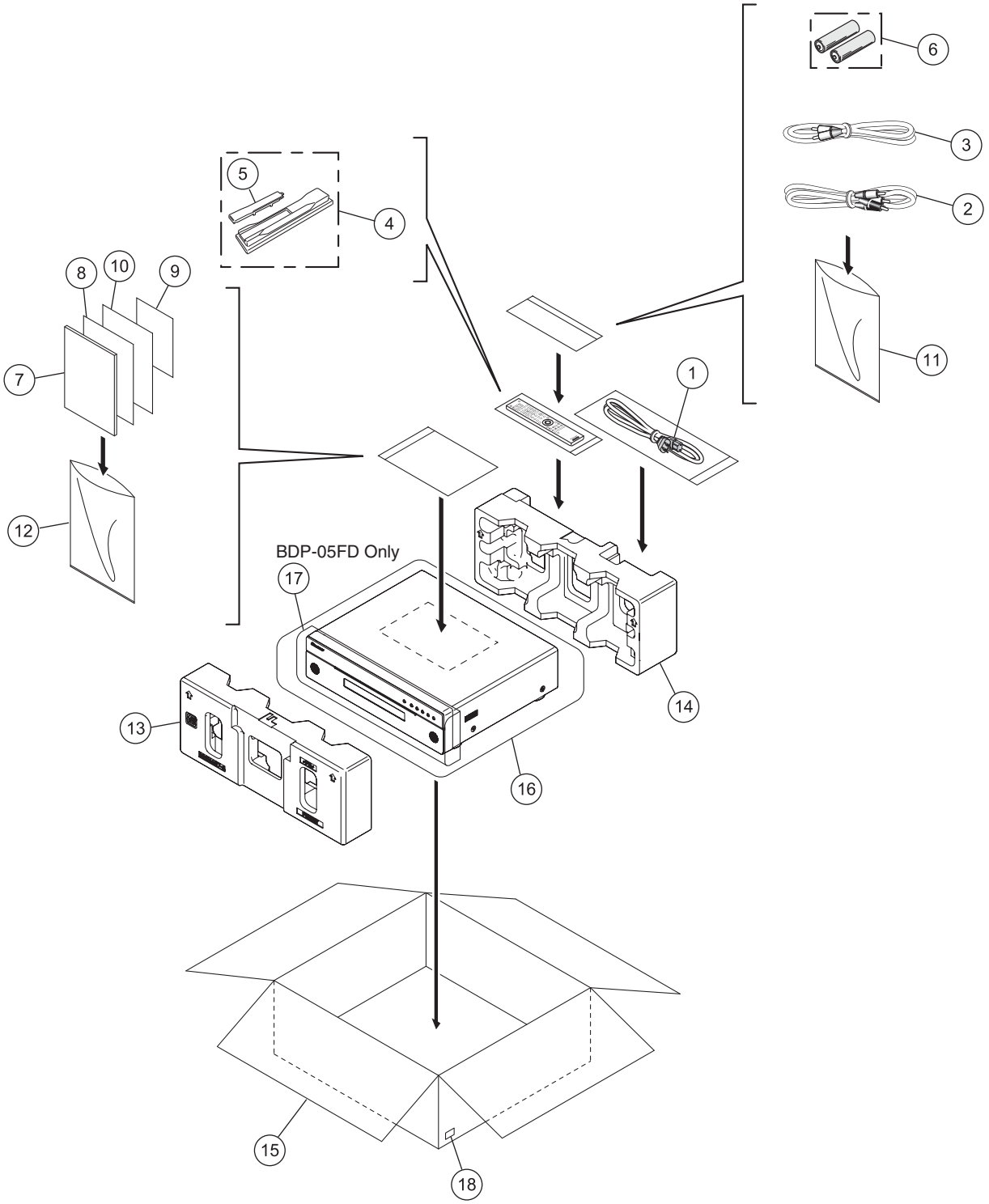


6. Remove the UPDATE disc from the tray.
7. Press the "STANDBY/ON" button to switch the unit on, and check if FL display indicates "DL OK". The updato is completed if FL display indicatates "DL OK".

9. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

9.1 PACKING SECTION



(1) PACKING SECTION PARTS LIST

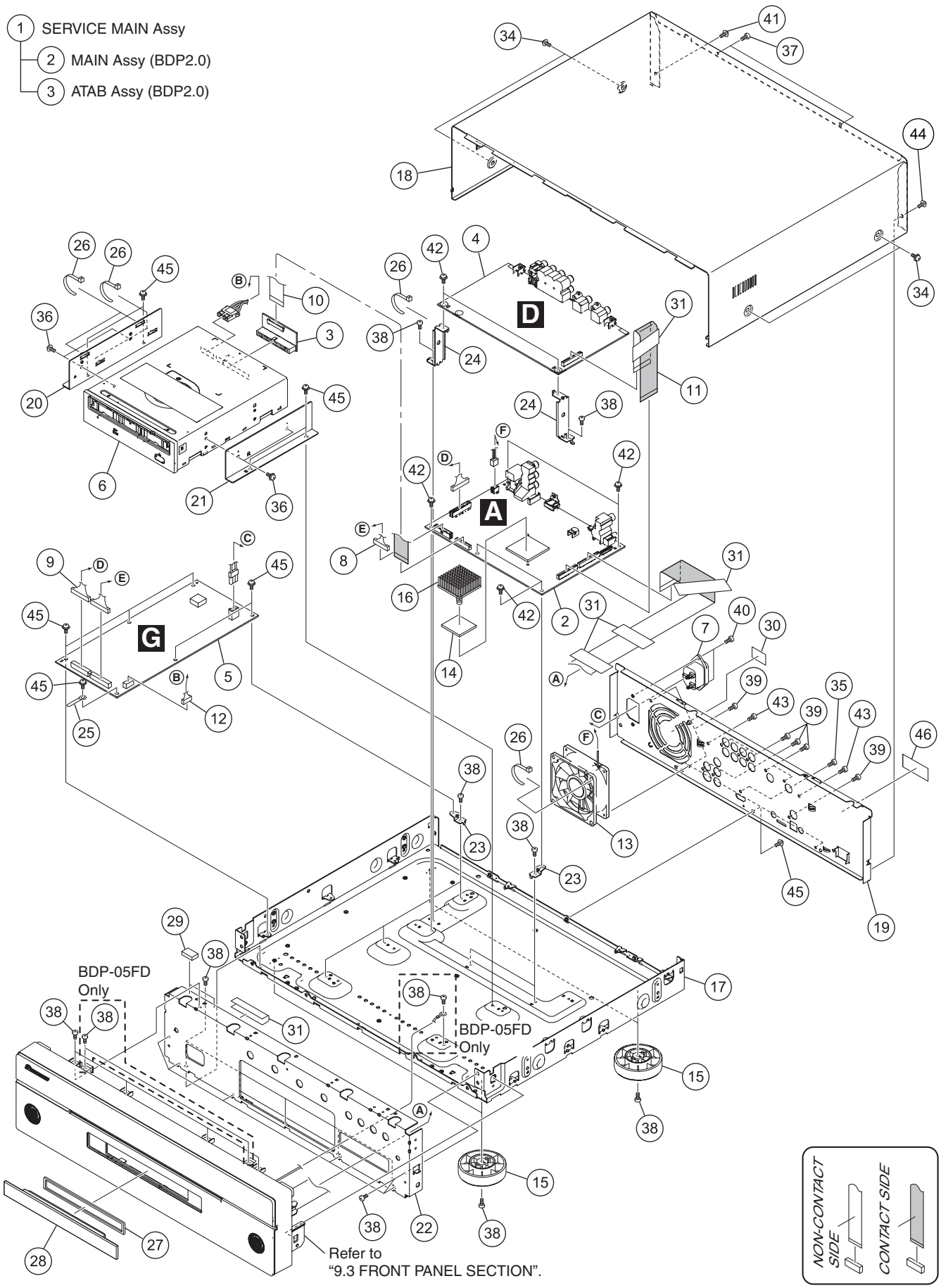
Mark	No.	Description	Part No.
⚠	1	Power Cable	ADG7061
	2	Audio Cable (white/red plugs)	VDE1064
	3	Video Cable (Yellow plugs)	VDE1065
	4	Remote Control	See Contrast table (2)
	5	Battery Cover	VZN1025
NSP	6	Dry Cell Battery (R6, AA)	AEX1025
	7	Operating Instructions (English)	See Contrast table (2)
NSP	8	Warranty Card	See Contrast table (2)
NSP	9	Update Guide (Paper)	VRY1171
	10	User Card	ARY1176
	11	Polyethylene Bag	VHL1051
NSP	12	Polyethylene Bag	Z21-038
	13	Front Pad (PS)	VHA1439
	14	Rear Pad (PS)	VHA1440
	15	Packing Case (Paper)	See Contrast table (2)
	16	Mirror Sheet	VHL1006
	17	Nonwoven Cloth Cover	See Contrast table (2)
NSP	18	Serial Label S	VRW2017

(2) CONTRAST TABLE

BDP-05FD/KU/CA and BDP-51FD/KU/CA are constructed the same except for the following:

Mark	No.	Symbol and Description	BDP-05FD /KU/CA	BDP-51FD /KU/CA
	4	Remote Control	VXX3313	VXX3333
	7	Operating Instructions (English)	VRB1502	VRB1505
NSP	8	Warranty Card	ARY1026	ARY7045
	15	Packing Case (Paper)	VHG2878	VHG2881
	17	Nonwoven Cloth Cover	VHL1129	Not used

9.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

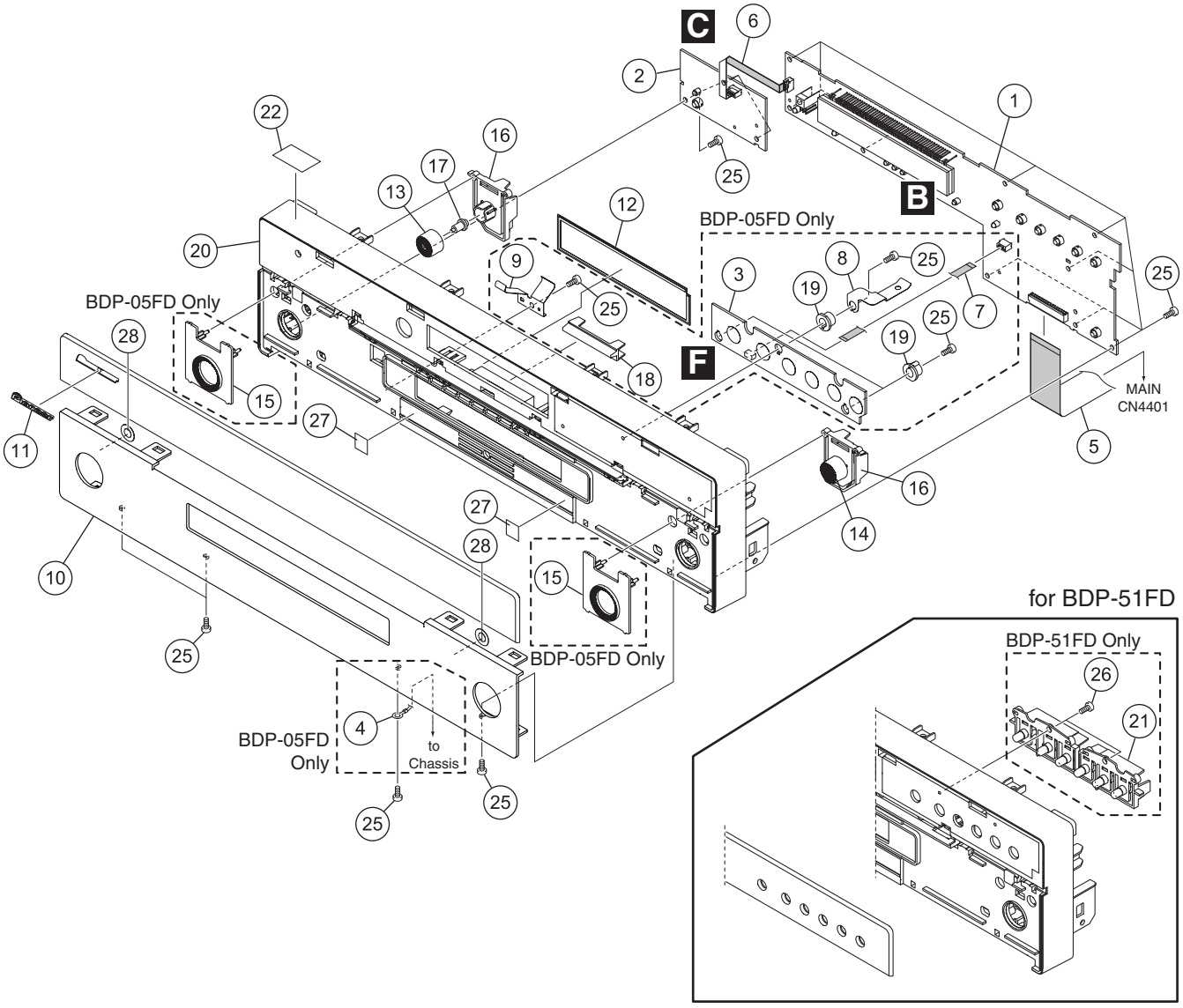
Mark	No.	Description	Part No.
	1	1..SERVICE MAIN Assy	See Contrast table (2)
NSP	2	2..MAIN Assy (BDP2.0)	See Contrast table (2)
	3	2..ATAB Assy (BDP2.0)	VWV2360
NSP	4	AUJB Assy	See Contrast table (2)
⚠	5	SYPS ASSY	VWR1415
	6	DRIVE Assy BDV-103-XP/5	VXX3325
⚠	7	AC Inlet Assy	ADX7723
	8	Connector Assy	PF11PP6D25
	9	Connector Assy	PF13PP-D32
	10	Flexible Cable (40 PIN)	VDA2182
	11	Flexible Cable 27P	VDA2183
	12	Housing Assy (4P)	VKP2408
	13	DC FAN Motor	VXM1122
	14	Thermal Sheet B	AEB1417
	15	Insulator	See Contrast table (2)
	16	Heatsink B	ANH1645
NSP	17	Base Chassis IPO (FE)	VNA3068
	18	Bonnet Case S	VXX3324
	19	Rear Panel IPO (FE)	See Contrast table (2)
NSP	20	Writer Stay L IPO (FE)	VNE2499
NSP	21	Writer Stay R IPO (FE)	VNE2500
NSP	22	Front Stay IPO (FE)	VNE2501
NSP	23	PCB Stay IPO (FE)	VNE2502
NSP	24	Rear Stay IPO (FE)	VNE2503
	25	Cord Clip	VNX1026
NSP	26	Binder (BK-1)	ZCA-BK1
	27	Tray Sheet (EPDM)	VEC2593
	28	Tray Panel IPO (ABS)	See Contrast table (2)
	29	Gasket 10 * 15T (PLA)	VEC2608
NSP	30	ID Label Assy	VXW1021
NSP	31	Tape	ZTA-156A-19
	32	•••••	
	33	•••••	
	34	CSM Screw C 4 x 6 (B)	ABA7137
	35	Screw (FE)	See Contrast table (2)
	36	Screw	AMZ30P060FTC
	37	Screw	See Contrast table (2)
	38	Screw	BBZ30P060FTC
	39	Screw	See Contrast table (2)
	40	Screw	See Contrast table (2)
	41	Screw	See Contrast table (2)
	42	Screw	IBZ30P060FCC
	43	Screw	See Contrast table (2)
	44	Screw	See Contrast table (2)
	45	Screw	See Contrast table (2)
	46	Serial Label S	VRW2017

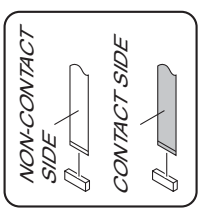
(2) CONTRAST TABLE

BDP-05FD/KU/CA and BDP-51FD/KU/CA are constructed the same except for the following:

Mark	No.	Symbol and Description	BDP-05FD /KU/CA	BDP-51FD /KU/CA
	1	SERVICE MAIN Assy	VXX3326	VXX3328
NSP	2	MAIN Assy (BDP2.0)	VWV2315	VWV2375
NSP	4	AUJB Assy	VWG2615	VWG2632
	15	Insulator	AMR7198	PNW2766
	19	Rear Panel IPO (FE)	VNA3070	VNA3075
	28	Tray Panel IPO (ABS)	VNK6407	VNK6408
	35	Screw (FE)	YBA1001	VBA1088
	37	Screw	BBZ30P060FCC	BBZ30P060FTB
	39	Screw	BPZ30P080FCC	BPZ30P080FTC
	40	Screw	CBZ30P080FCC	CBZ30P080FTC
	41	Screw	IBP30P090FCC	BBZ30P060FTB
	43	Screw	BBZ30P060FCC	BBZ30P060FTC
	44	Screw	IBZ30P060FCC	BBZ30P060FTB
	45	Screw	IBZ30P060FCC	BBZ30P060FTC

9.3 FRONT PANEL SECTION





(1) FRONT PANEL SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	FLKY Assy	See Contrast table (2)
	2	PSWB Assy	VWG2613
	3	CAPK Assy	See Contrast table (2)
NSP	4	Cord with Plug	See Contrast table (2)
	5	Flexible Cable 30P	VDA2185
	6	Flexible Cable 5P	VDA2186
	7	Flexible Cable 5P	See Contrast table (2)
	8	Earth Plate Cap (CU)	See Contrast table (2)
	9	Earth Plate AL IPO	See Contrast table (2)
	10	AL Panel IPO (AL)	See Contrast table (2)
	11	Pioneer Badge G (AL)	See Contrast table (2)
	12	FL Filter IPO (IPO)	See Contrast table (2)
	13	Key Top PW (ABS)	VNK6380
	14	Key Top PL (ABS)	VNK6381
	15	Ring (ABS)	See Contrast table (2)
	16	Key Base PW/PL IPO	VNK6412
	17	Key Lens IPO (ABS)	VNK6417
	18	IB Lens V5SEL IPO (PL)	See Contrast table (2)
	19	PCB Mould HQ IPO (PLS)	See Contrast table (2)
	20	Panel Base Assy IPO	See Contrast table (2)
	21	MAIN Key IPO (ABS)	See Contrast table (2)
NSP	22	Energy Star Label	AAX8022
	23	•••••	
	24	•••••	
	25	Screw	BPZ30P080FBN
	26	Screw	See Contrast table (2)
	27	SPACER PB (PET)	See Contrast table (2)
	28	FIBER WASHER	See Contrast table (2)

(2) CONTRAST TABLE

BDP-05FD/KU/CA and BDP-51FD/KU/CA are constructed the same except for the following:

Mark	No.	Symbol and Description	BDP-05FD /KU/CA	BDP-51FD /KU/CA
	1	FLKY Assy	VWG2612	VWG2625
	3	CAPK Assy	VWG2614	Not used
NSP	4	Cord with Plug	DE007VC0	Not used
	7	Flexible Cable 5P	VDA2186	Not used
	8	Earth Plate Cap (CU)	VBK1189	Not used
	9	Earth Plate AL IPO	VBK1190	Not used
	10	AL Panel IPO (AL)	VAH1464	Not used
	10	Front Cover IPO (ABS)	Not used	VNK6418
	11	Pioneer Badge G (AL)	VAM1159	Not used
	11	Name Plate B NEW (AL)	Not used	AAN7218
	12	FL Filter IPO (IPO)	VEC2605	Not used
	12	FL Filter IPO (PC)	Not used	VEC2606
	15	Ring (ABS)	VNK6382	Not used
	18	IB Lens V5SEL IPO (PL)	VNK6440	Not used
	19	PCB Mould HQ IPO (PLS)	VNK6441	Not used
	20	Panel Base Assy IPO	VXA2955	VXA2958
	21	MAIN Key IPO (ABS)	Not used	VNK6420
	26	Screw	Not used	BPZ26P060FTC
	27	SPACER PB (PET)	Not used	VEC2633
	28	FIBER WASHER	Not used	VEC2634

10. SCHEMATIC DIAGRAM
10.1 MAIN ASSY (1/10)

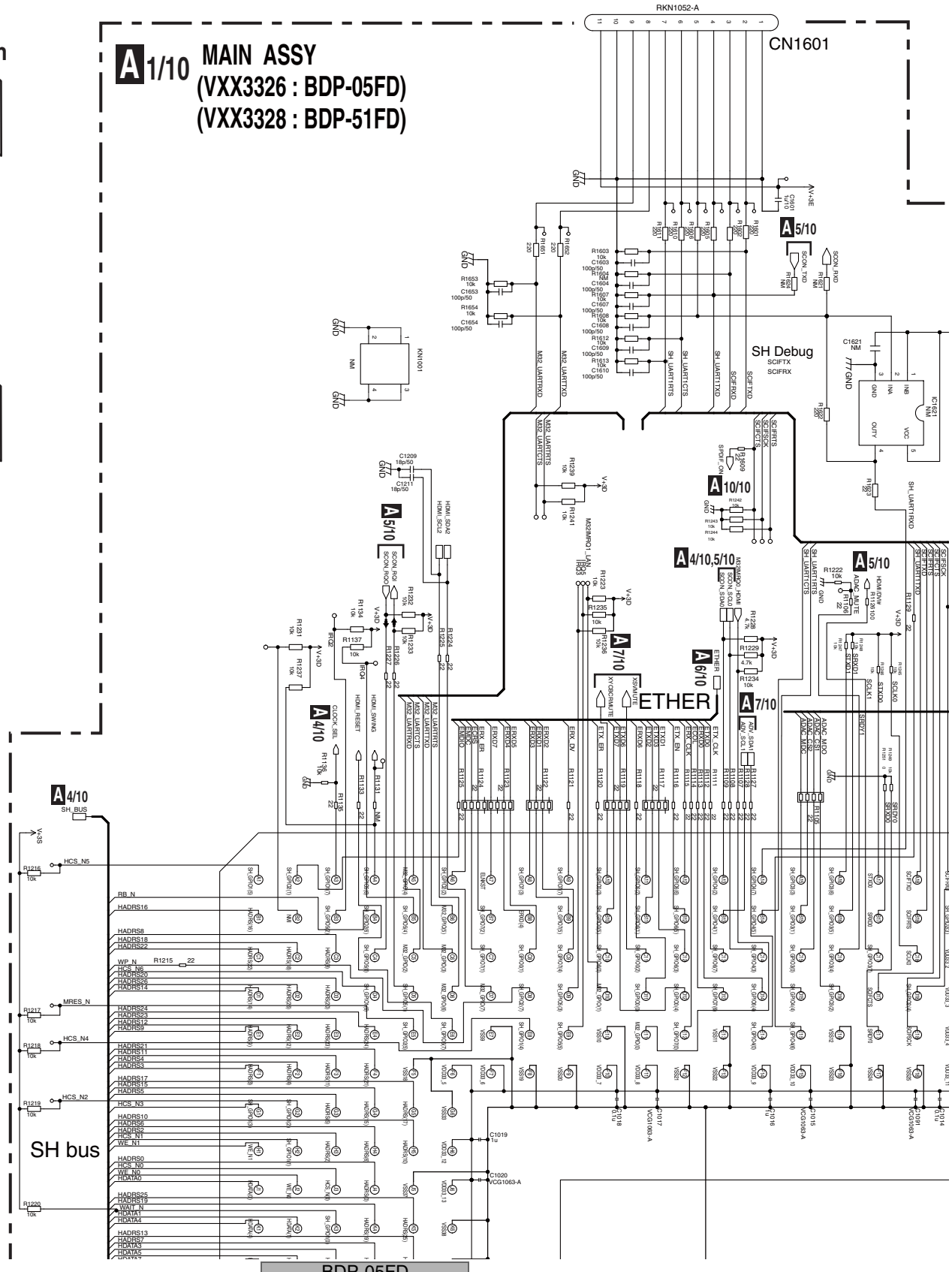
Large size SCH diagram

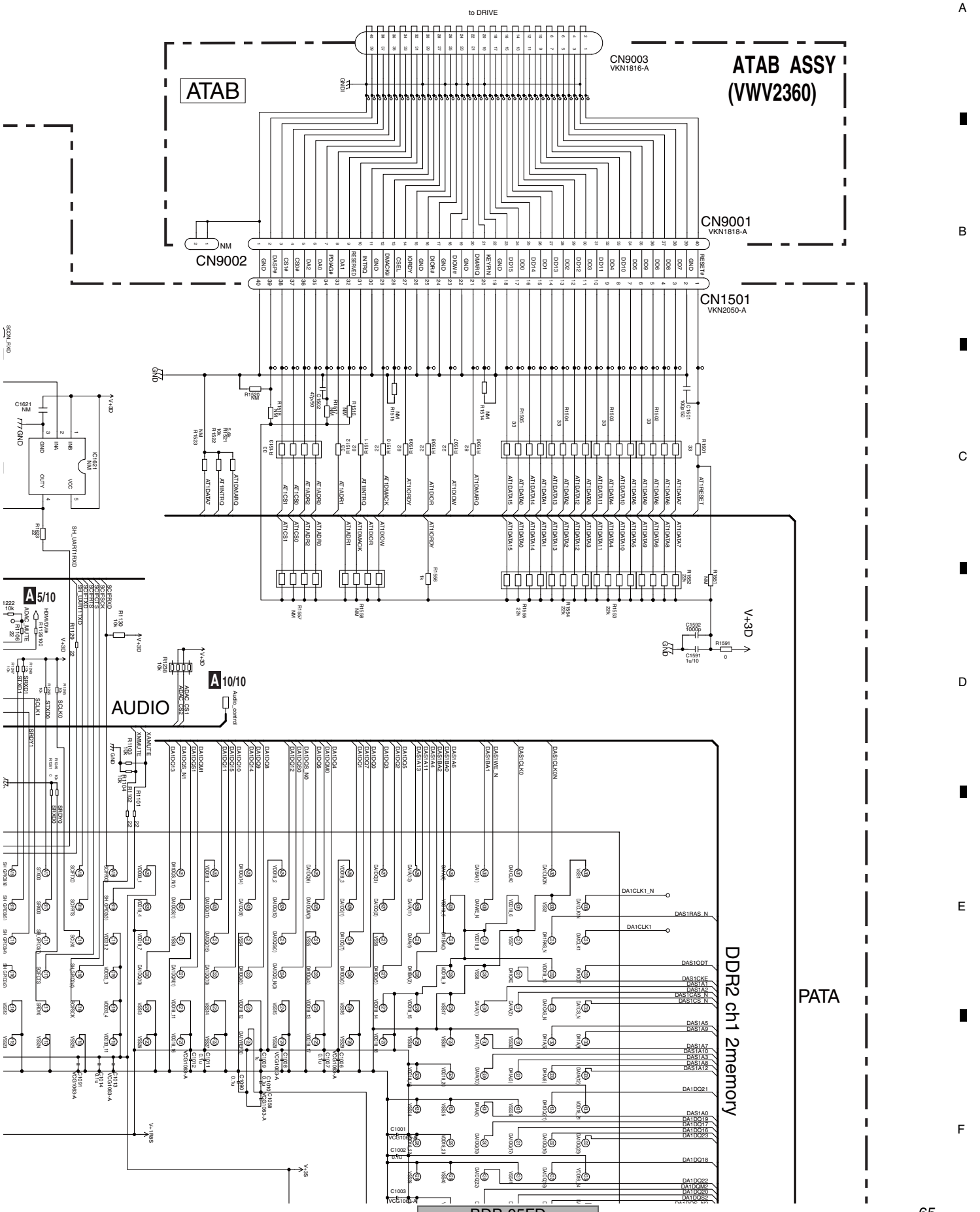
1/2

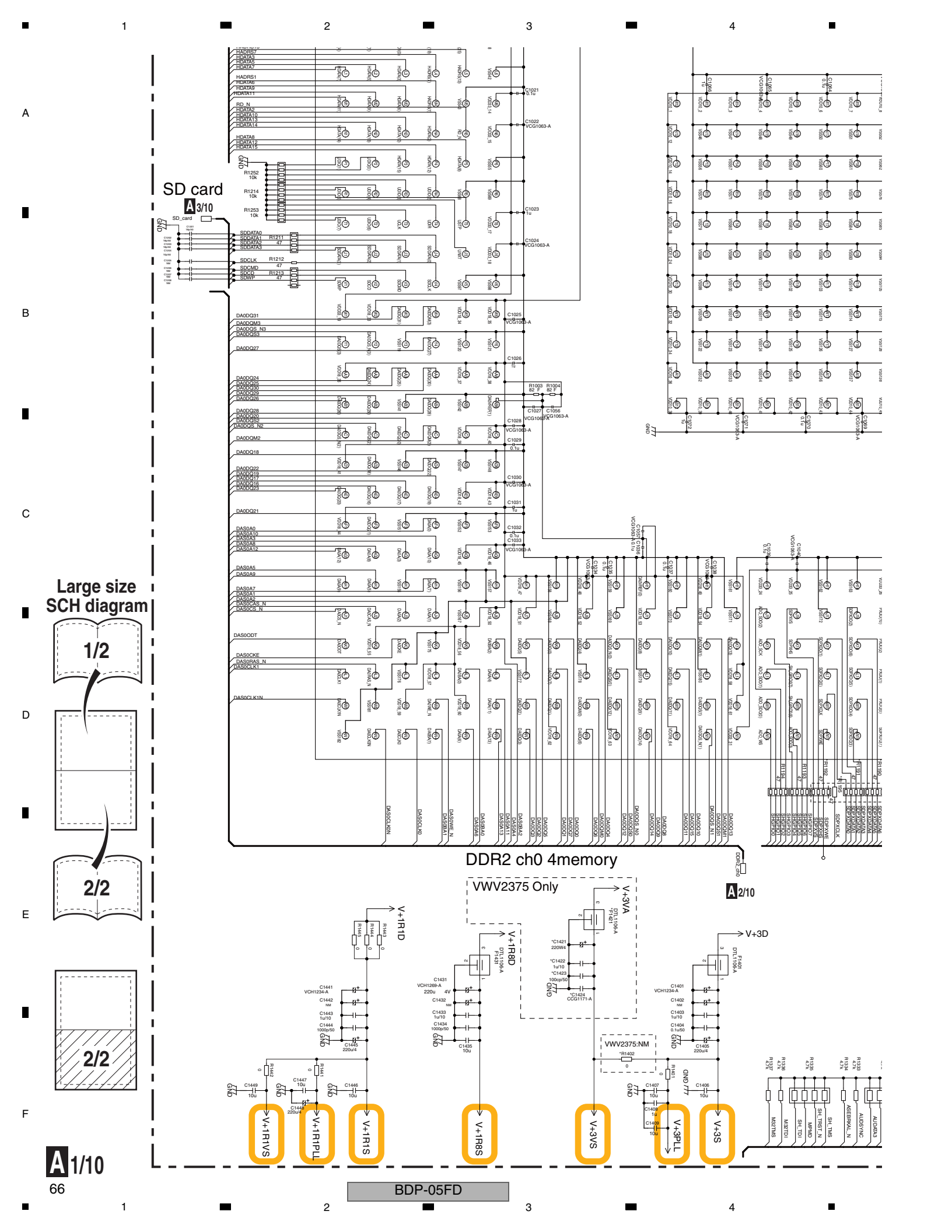
2/2

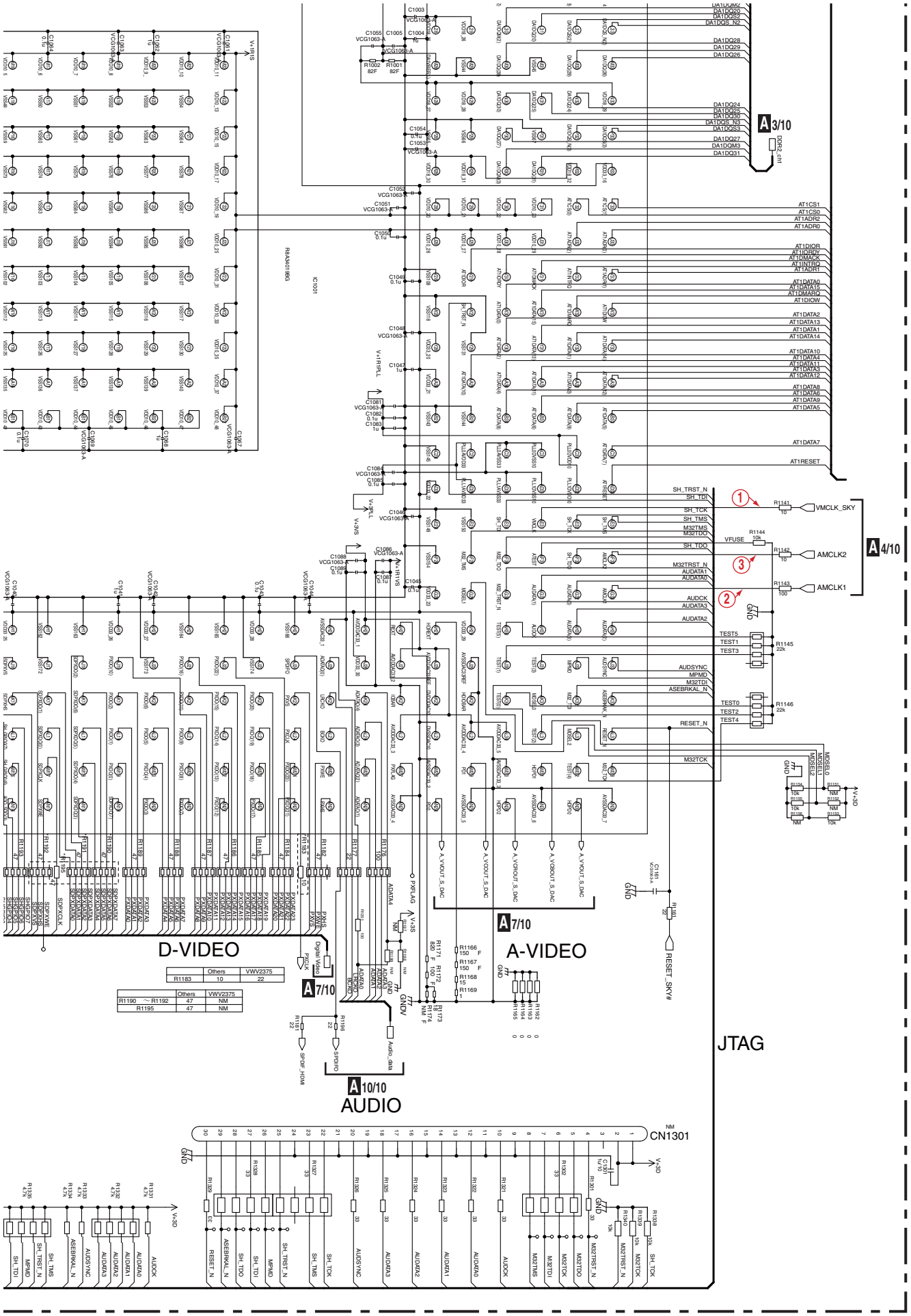
1/2

A 1/10 MAIN ASSY
(VXX3326 : BDP-05FD)
(VXX3328 : BDP-51FD)




ATAB
ATAB ASSY
(VWV2360)
CN9003
VKN1816-A
CN9001
VKN1818-A
CN9002
CN1501
VKN2050-A
to DRIVE
AUDIO
PATA
DDR2 ch1 2memory
BDP-05FD

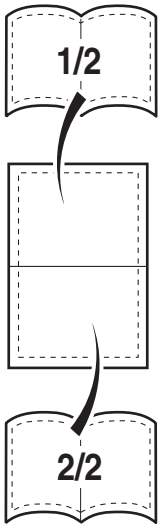

SD card
A3/10
DDR2 ch0 4memory
A2/10
VWV2375 Only
V+3VA
V+1R8D
V+3D
V+1R1D
VWV2375:NM
V+1R1VS
V+1R1PLL
V+1R1S
V+1R8S
V+3VS
V+3PLL
V+3S
Large size
SCH diagram
1/2
2/2
2/2
A1/10
66
BDP-05FD

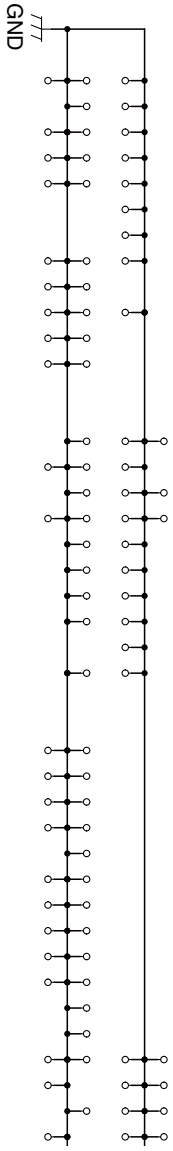

D-VIDEO
A-VIDEO
JTAG
AUDIO
A 3/10
A 4/10
A 7/10
A 7/10
A 10/10
A 1/10
VMCLK_SKY
AMCLK2
AMCLK1
RESET_SKY#
CN1301
IC1001
R8A34019BG
SH_TRST_N
SH_TDI
SH_TCK
SH_TMS
M32TMS
M32TDO
M32TCK
M32TDI
M32TRST_N
AUDCK
AUDATA3
AUDATA2
AUDATA1
AUDATA0
AUDSYNC
MPMD
ASEBRKAL_N
RESET_N
VFUSE
TEST5
TEST1
TEST3
TEST0
TEST2
TEST4
MOSELO
MOSELE
PXCLK
PXVE
PXVS
PXDATA3
PXDATA2
PXDATA1
PXDATA0
SDPXCLK
SDPXVE
SDPXVS
SDPXDATA3
SDPXDATA2
SDPXDATA1
SDPXDATA0
SPDIF_HDMI
SPDIF0
Audio_data
Digital Video
A_VOUT_S_DAC
A_VGROUT_S_DAC
A_VOUT_S_DAC
A_VBOUT_S_DAC
A_VOUT_S_DAC
Others
VWV2375
R1183
10
22
R1190 ~ R1192
47
NM
R1195
47
NM
BDP-05FD
67

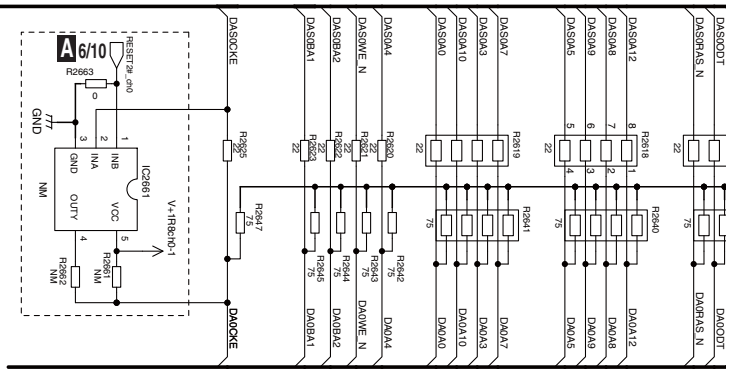
10.2 MAIN ASSY (2/10)

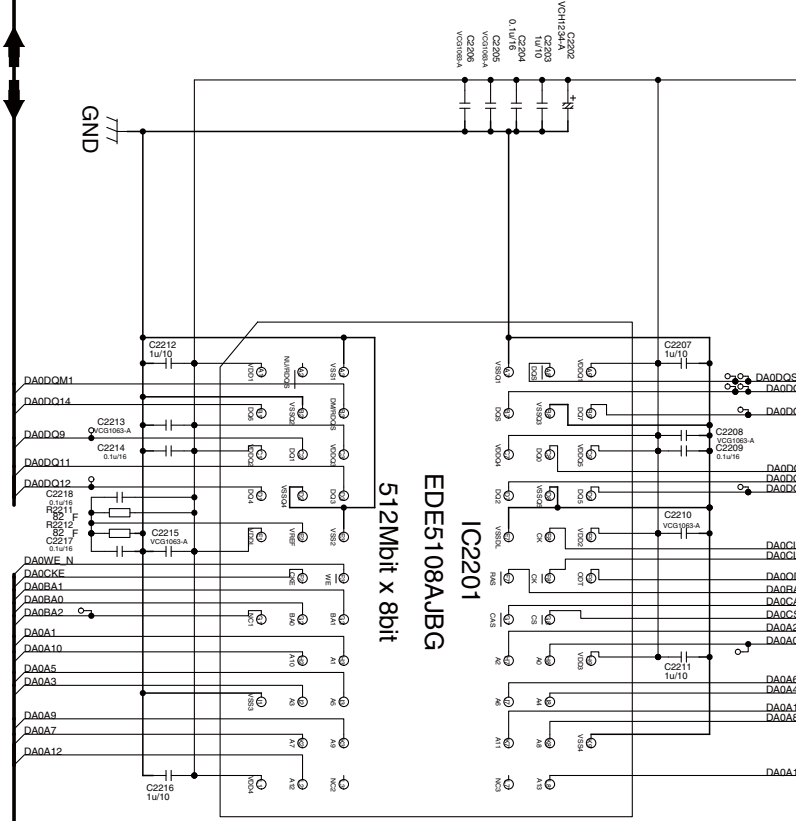
A 2/10 MAIN ASSY (VXX3326 : BDP-05FD) (VXX3328 : BDP-51FD)

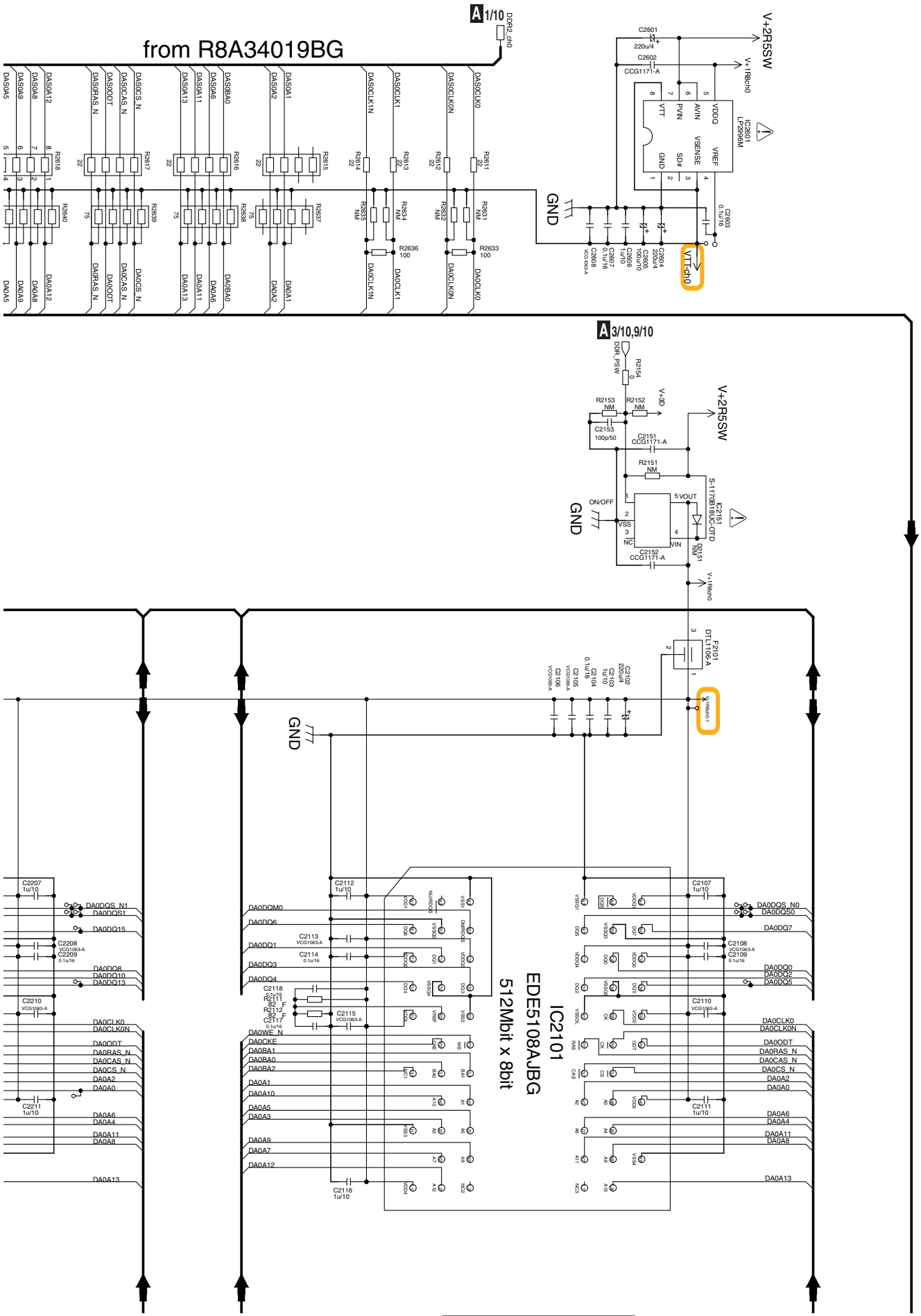
Large size SCH diagram

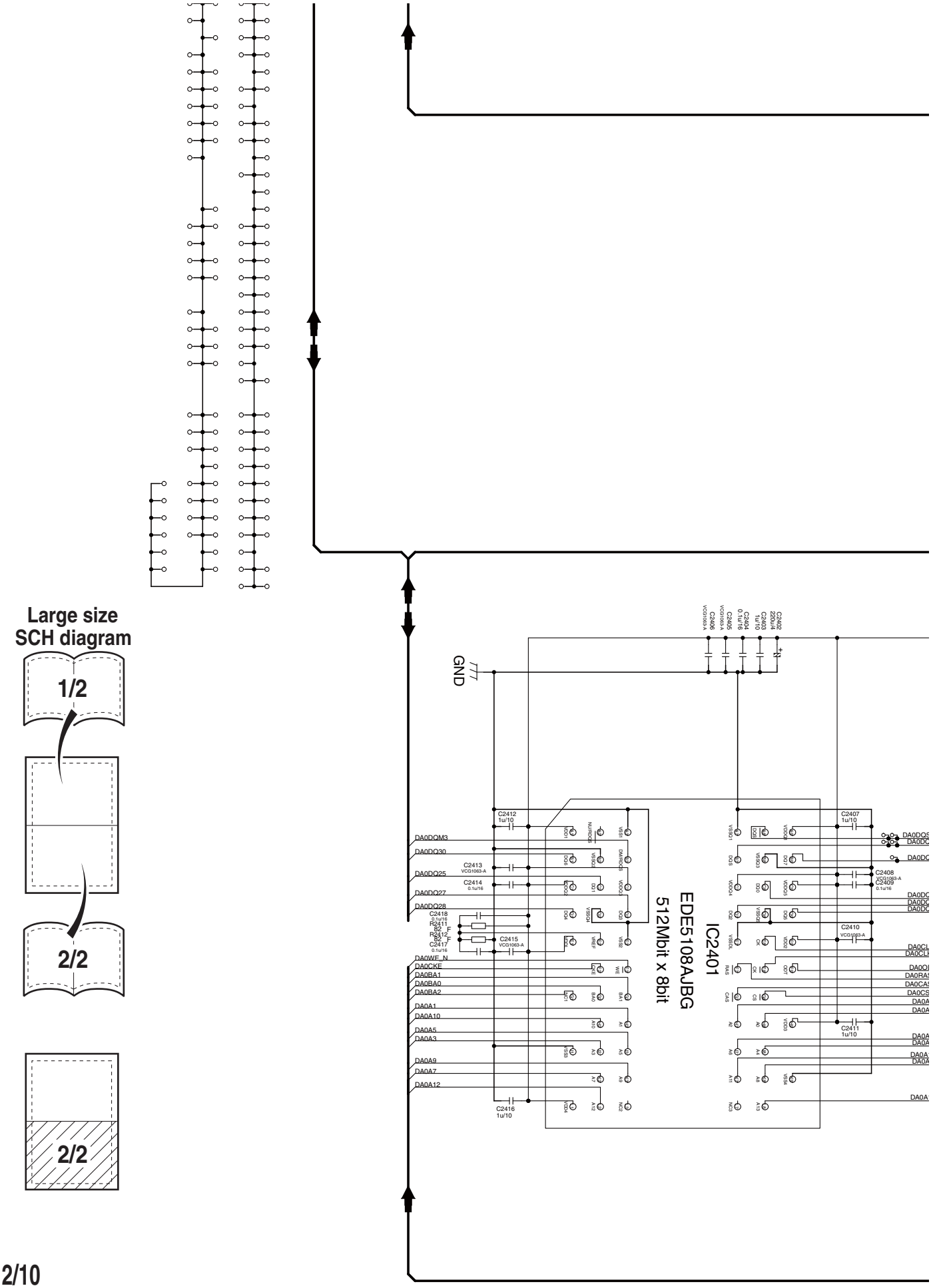


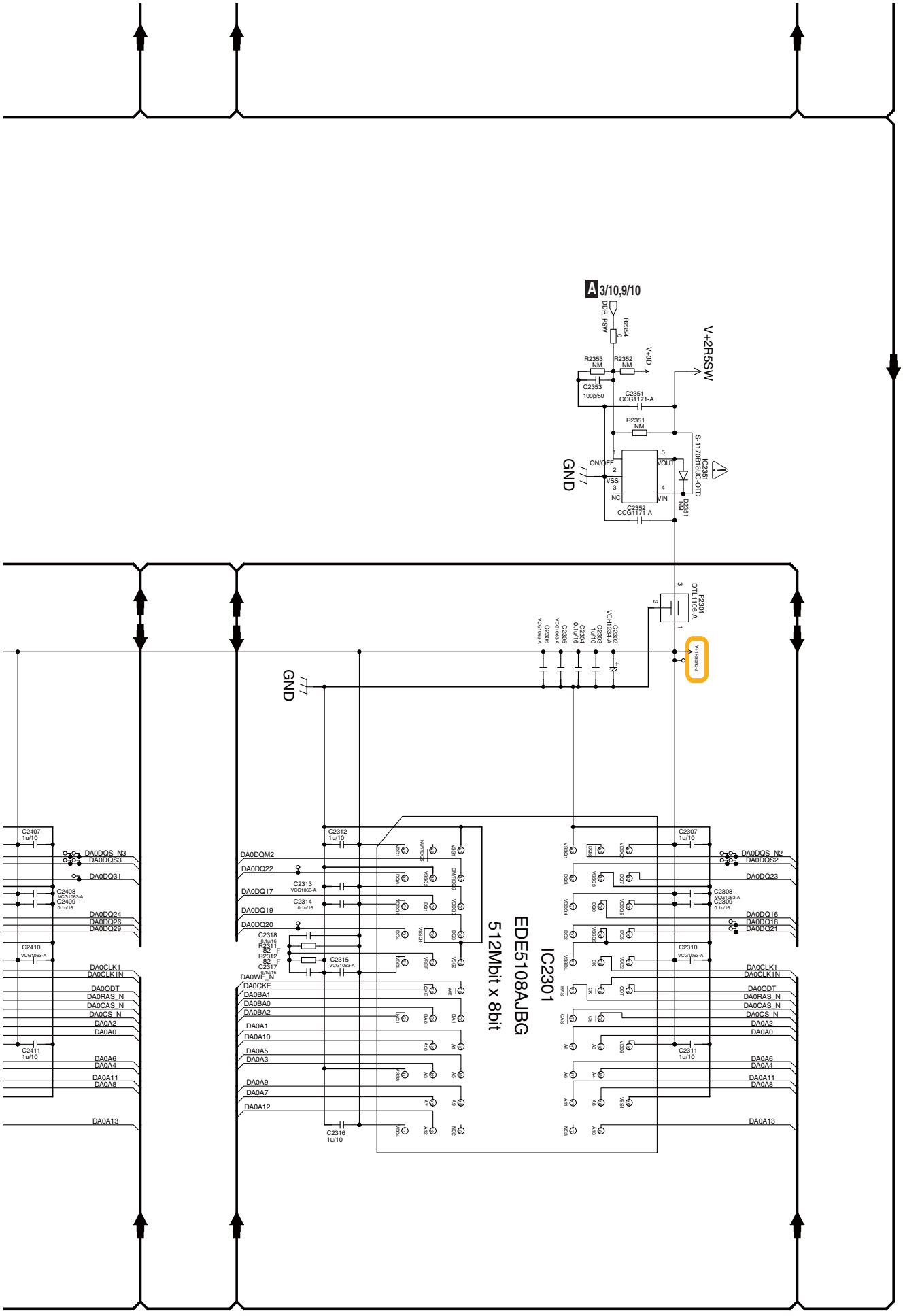







from R8A34019BG
A1/10
A3/10,9/10
V+2R5SW
GND
IC2101
EDE5108AJBG
512Mbit x 8bit
DDR2 ch0

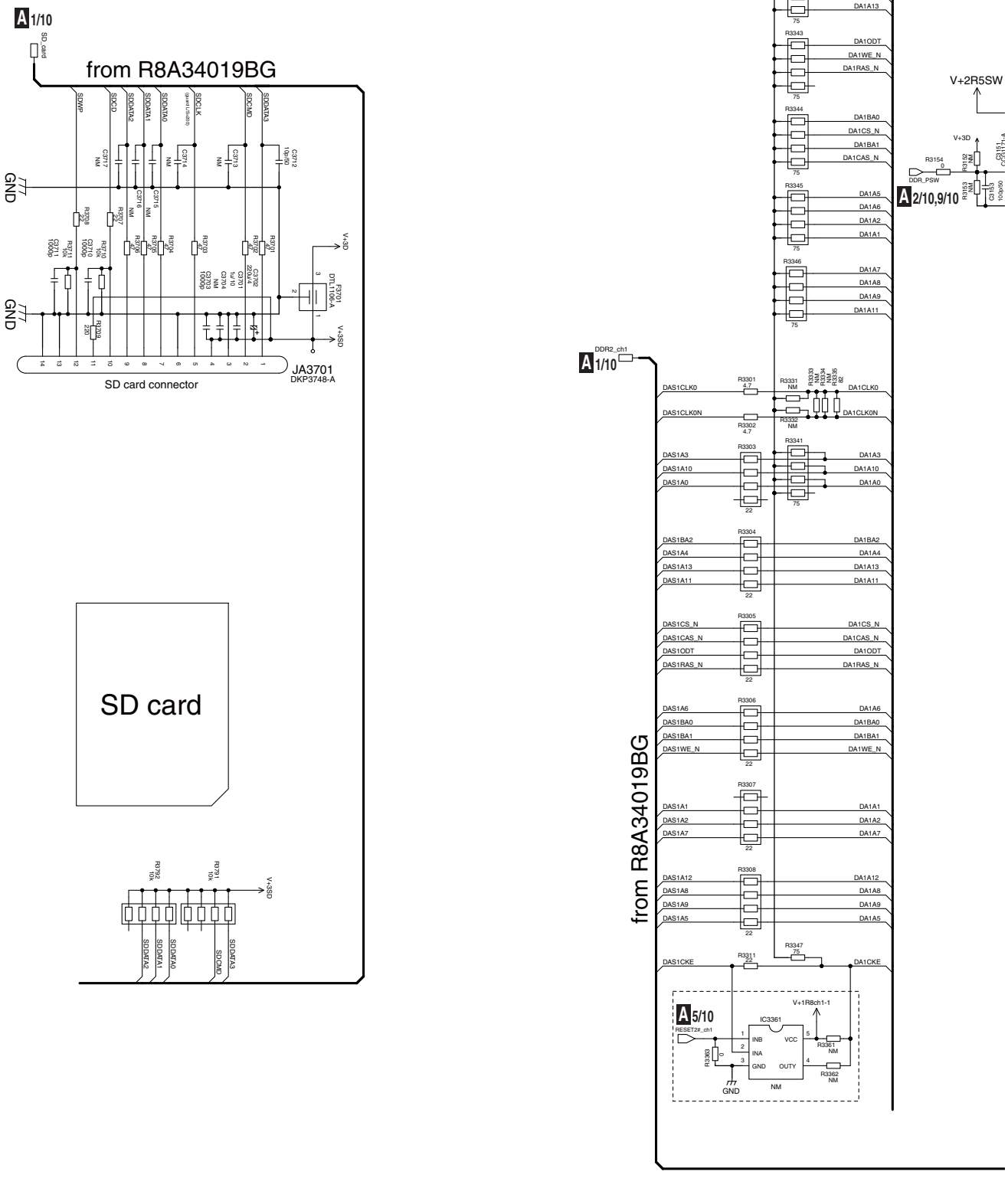

Large size
SCH diagram
1/2
2/2
2/2
GND
IC2401
EDE5108AJBG
512Mbit x 8bit


A3/10,9/10
DDR_PSW
R2354 0
V+3D
V+2R5SW
R2353 NM
R2352 NM
C2353 100p/50
C2351 CCG1171-A
R2351 NM
S-1170B18UC-OTD
IC2351
ON/OFF
VSS
NC
VOUT
VIN
D2351 NM
C2352 CCG1171-A
GND
F2301 DTL1T10T-A
C2306
C2305
C2304 0.1u/16
C2303 1u/10
C2302 CCH2344-A
GND
C2407 1u/10
DA0DQS_N3
DA0DQS3
DA0DQ31
C2408 C2409 0.1u/16
DA0DQ24
DA0DQ26
DA0DQ29
C2410
DA0CLK1
DA0CLK1N
DA0ODT
DA0RAS_N
DA0CAS_N
DA0CS_N
DA0A2
DA0A0
C2411 1u/10
DA0A6
DA0A4
DA0A11
DA0A8
DA0A13
C2312 1u/10
DA0DQM2
DA0DQ22
C2313
DA0DQ17
C2314 0.1u/16
DA0DQ19
DA0DQ20
C2318 0.1u/16
R2311 82_F
R2312 82_F
C2317 0.1u/16
C2315
DA0WE_N
DA0CKE
DA0BA1
DA0BA0
DA0BA2
DA0A1
DA0A10
DA0A5
DA0A3
DA0A9
DA0A7
DA0A12
C2316 1u/10
IC2301
EDE5108AJBG
512Mbit x 8bit
C2307 1u/10
DA0DQS_N2
DA0DQS2
DA0DQ23
C2308 C2309 0.1u/16
DA0DQ16
DA0DQ18
DA0DQ21
C2310
DA0CLK1
DA0CLK1N
DA0ODT
DA0RAS_N
DA0CAS_N
DA0CS_N
DA0A2
DA0A0
C2311 1u/10
DA0A6
DA0A4
DA0A11
DA0A8
DA0A13

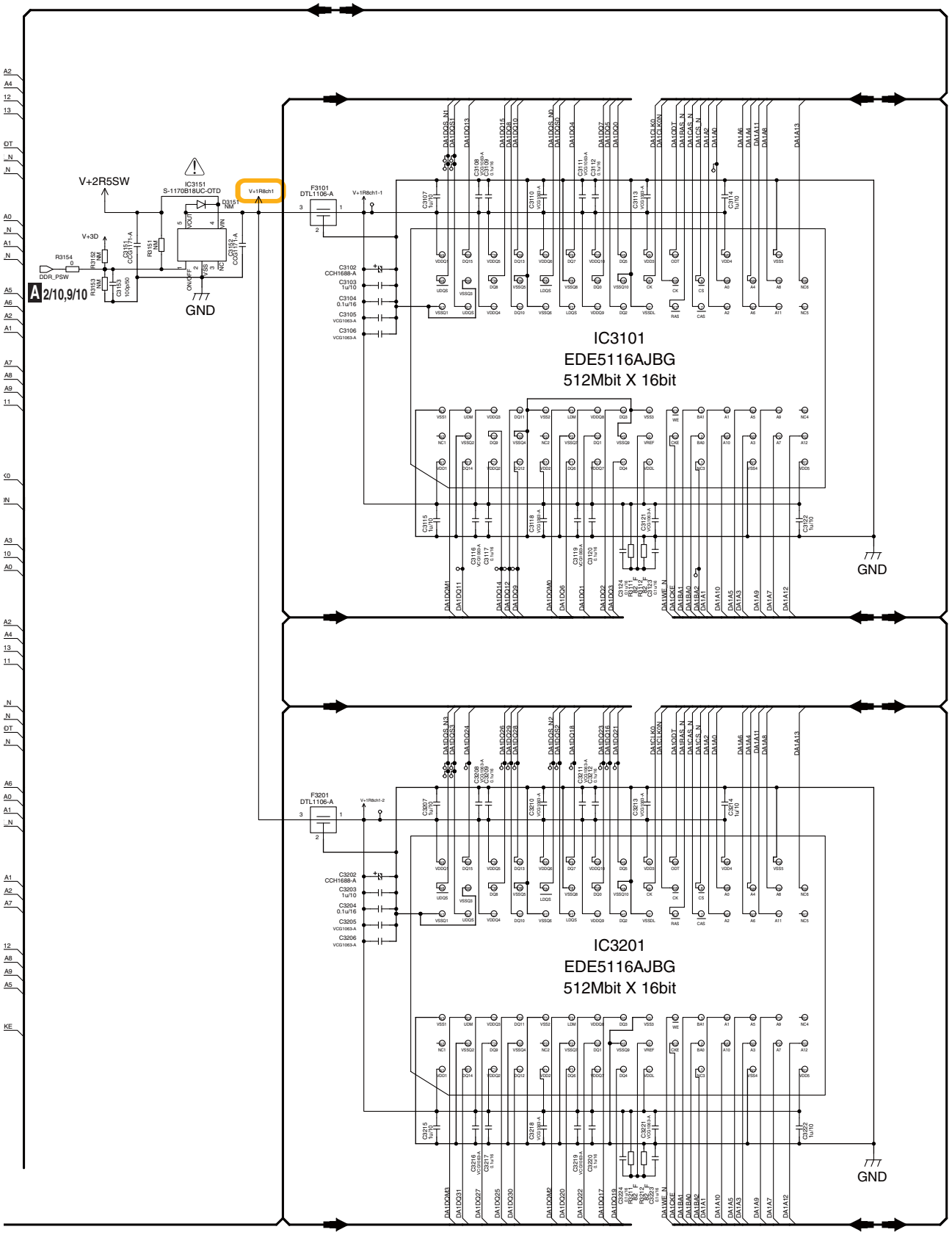
DDR2 ch0

10.3 MAIN ASSY (3/10)

A 3/10 MAIN ASSY (VXX3326 : BDP-05FD) (VXX3328 : BDP-51FD)



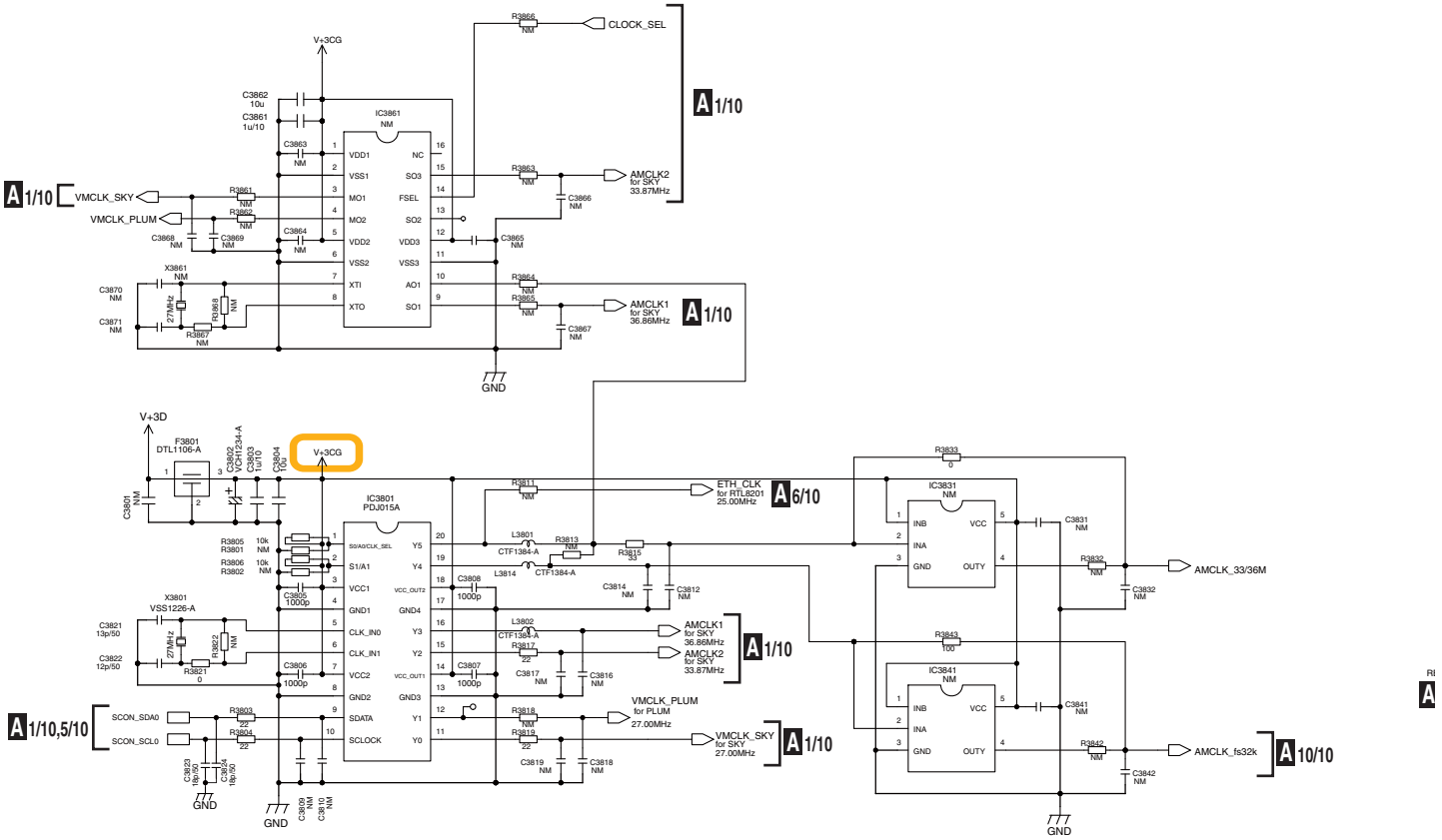
DDR2 ch1


V+2R5SW
IC3151
S-1170B18UC-OTD
V+1R8ch1
F3101
DTL1106-A
V+1R8ch1-1
V+3D
R3154
DDR_PSW
R3152
R3153
R3151
C3151
C3152
C3153
GND
A2/10,9/10
C3102
CCH1688-A
C3103
1u/10
C3104
0.1u/16
C3105
C3106
IC3101
EDE5116AJBG
512Mbit X 16bit
C3107
C3108
C3109
C3110
C3111
C3112
C3113
C3114
C3115
C3116
C3117
C3118
C3119
C3120
C3121
C3122
C3124
R3211
R3212
C3123
GND
F3201
DTL1106-A
V+1R8ch1-2
C3202
CCH1688-A
C3203
1u/10
C3204
0.1u/16
C3205
C3206
IC3201
EDE5116AJBG
512Mbit X 16bit
C3207
C3208
C3209
C3210
C3211
C3212
C3213
C3214
C3215
C3216
C3217
C3218
C3219
C3220
C3221
C3222
C3224
R3311
R3312
C3223
GND

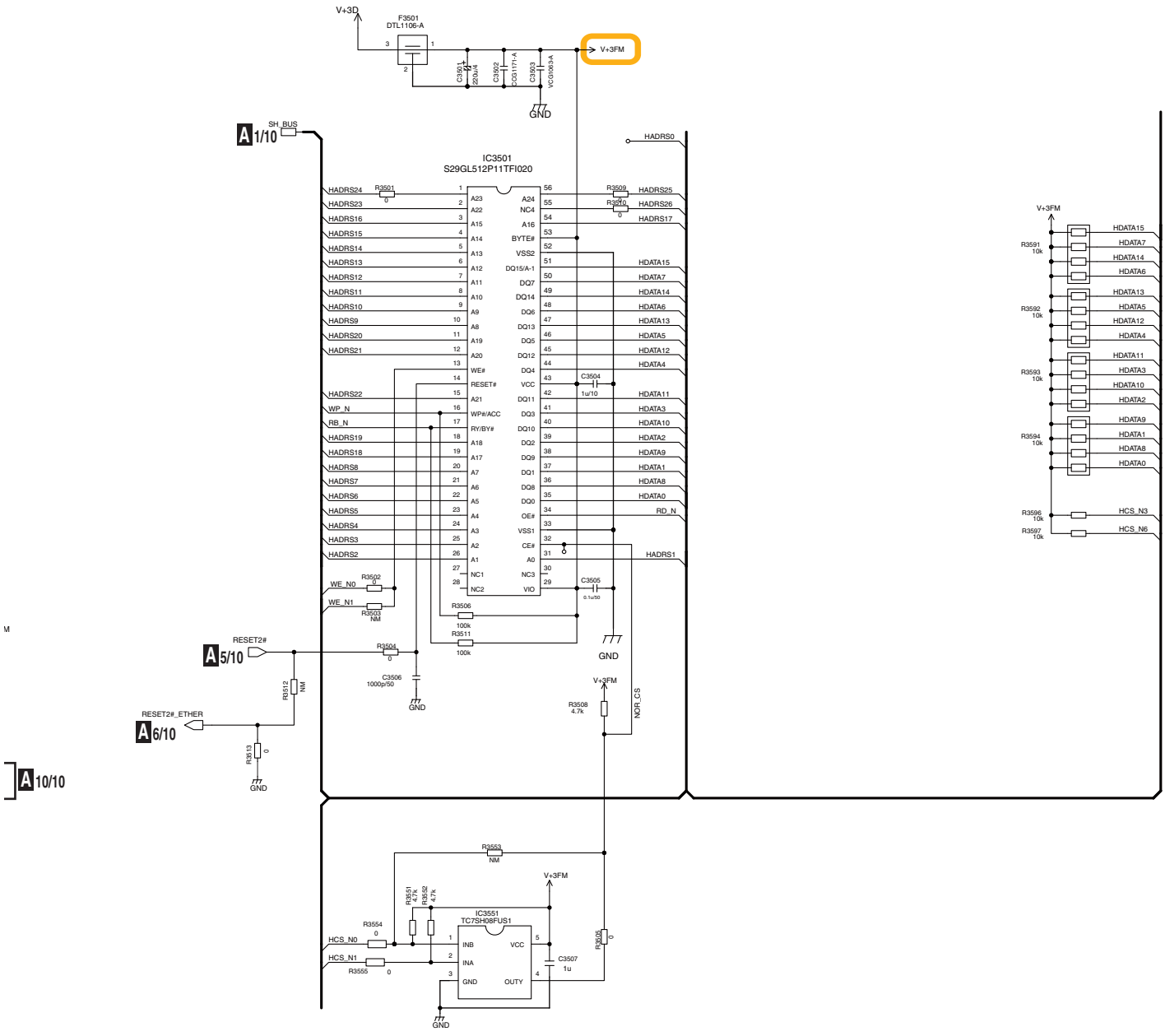
10.4 MAIN ASSY (4/10)

A 4/10 MAIN ASSY
(VXX3326 : BDP-05FD)
(VXX3328 : BDP-51FD)

Clock Generator

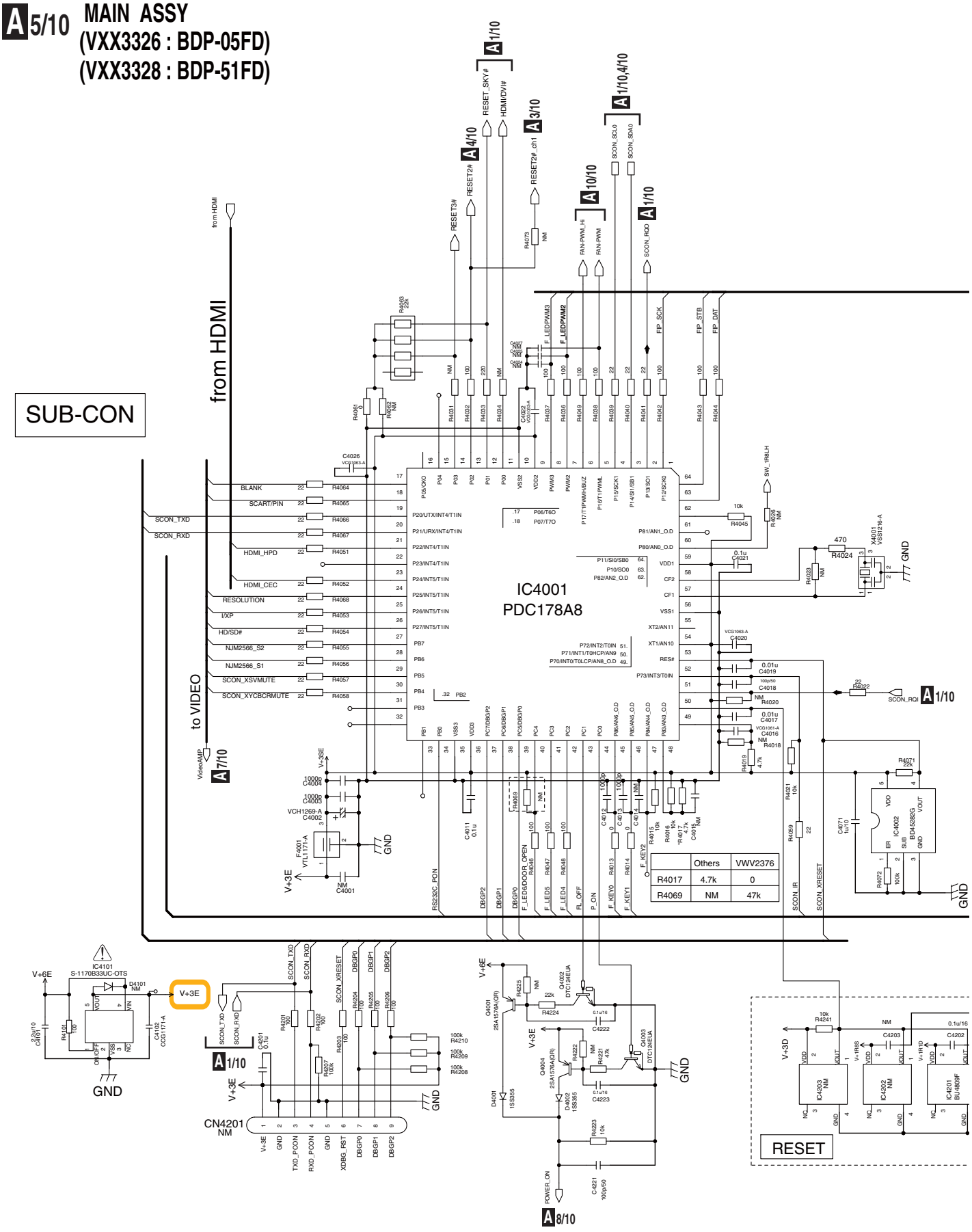


Nor FLASH

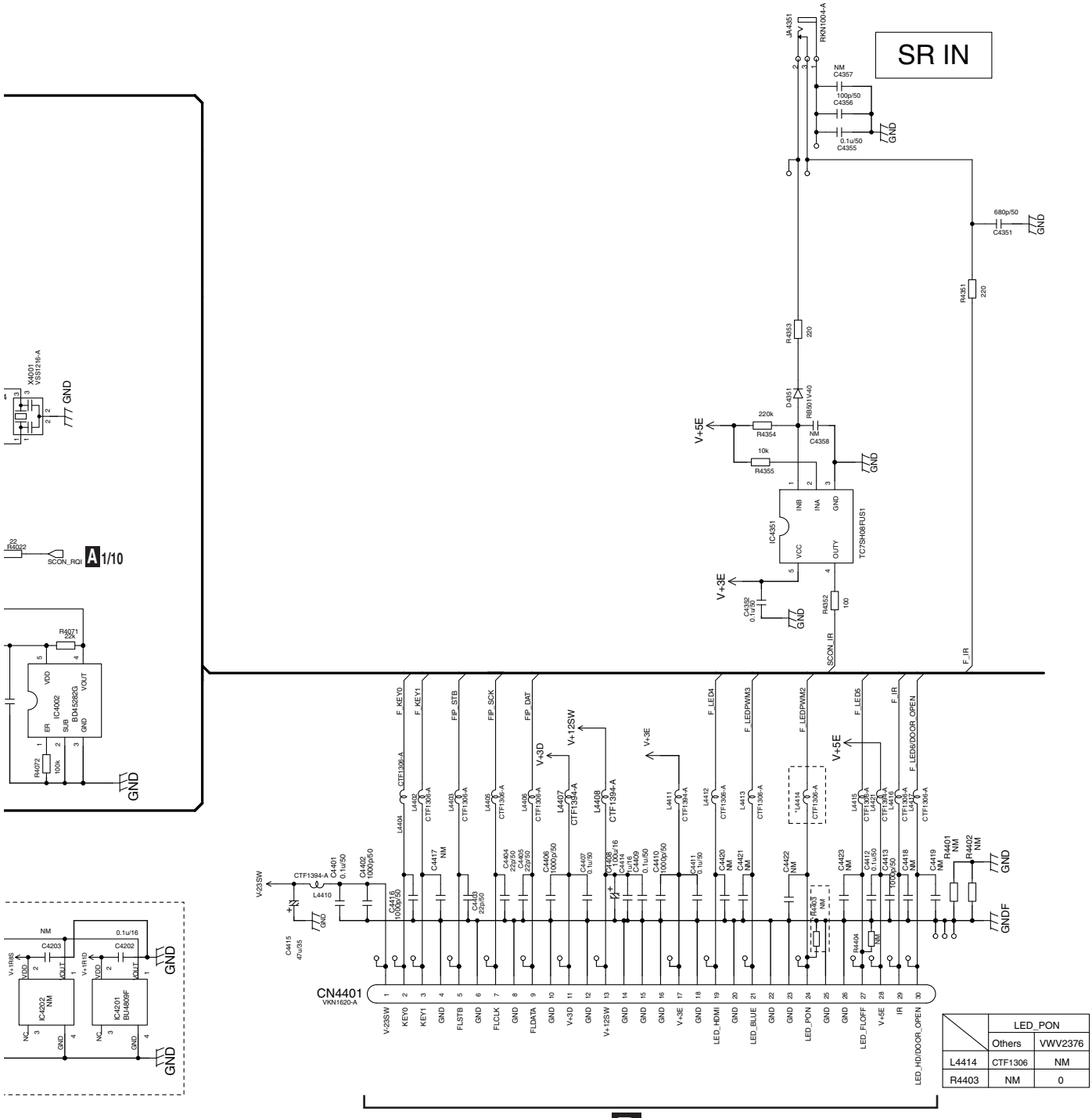

V+3D
F3501
DTL1106-A
V+3FM
C3501
220u/4
C3502
0.1u/10
C3503
VC0603-A
GND
SH_BUS
A1/10
IC3501
S29GL512P11TFI020
HADRS0
HADRS24
HADRS23
HADRS16
HADRS15
HADRS14
HADRS13
HADRS12
HADRS11
HADRS10
HADRS9
HADRS20
HADRS21
HADRS22
WP_N
RB_N
HADRS19
HADRS18
HADRS8
HADRS7
HADRS6
HADRS5
HADRS4
HADRS3
HADRS2
HADRS25
HADRS26
HADRS17
HDATA15
HDATA7
HDATA14
HDATA6
HDATA13
HDATA5
HDATA12
HDATA4
HDATA11
HDATA3
HDATA10
HDATA2
HDATA9
HDATA1
HDATA8
HDATA0
RD_N
HADRS1
C3504
1u/10
C3505
0.1u/50
R3501
R3502
R3503
NM
R3504
R3506
100k
R3511
100k
WE_N0
WE_N1
RESET2#
A5/10
C3506
1000p/50
R3512
NM
RESET2#_ETHER
A6/10
R3513
A10/10
R3508
4.7k
NOR_CS
R3509
R3510
V+3FM
R3591
10k
R3592
10k
R3593
10k
R3594
10k
R3596
10k
R3597
10k
HCS_N3
HCS_N6
R3553
NM
IC3551
TC7SH08FUS1
R3551
4.7k
R3552
4.7k
R3554
R3555
HCS_N0
HCS_N1
INB
INA
GND
VCC
OUTY
C3507
1u
R3505

10.5 MAIN ASSY (5/10)

A 5/10 MAIN ASSY (VXX3326 : BDP-05FD) (VXX3328 : BDP-51FD)

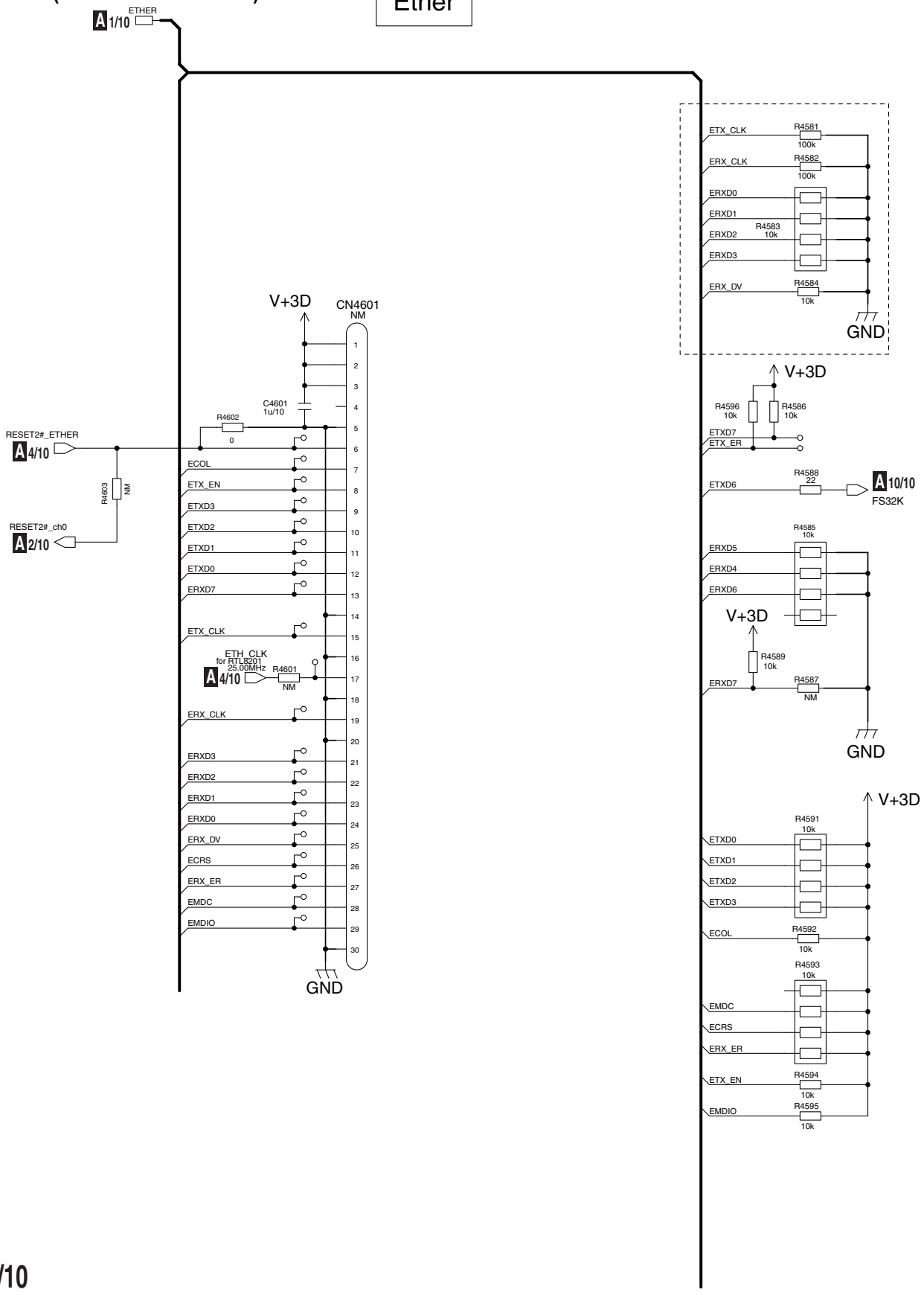


	Others	VWV2376
R4017	4.7k	0
R4069	NM	47k

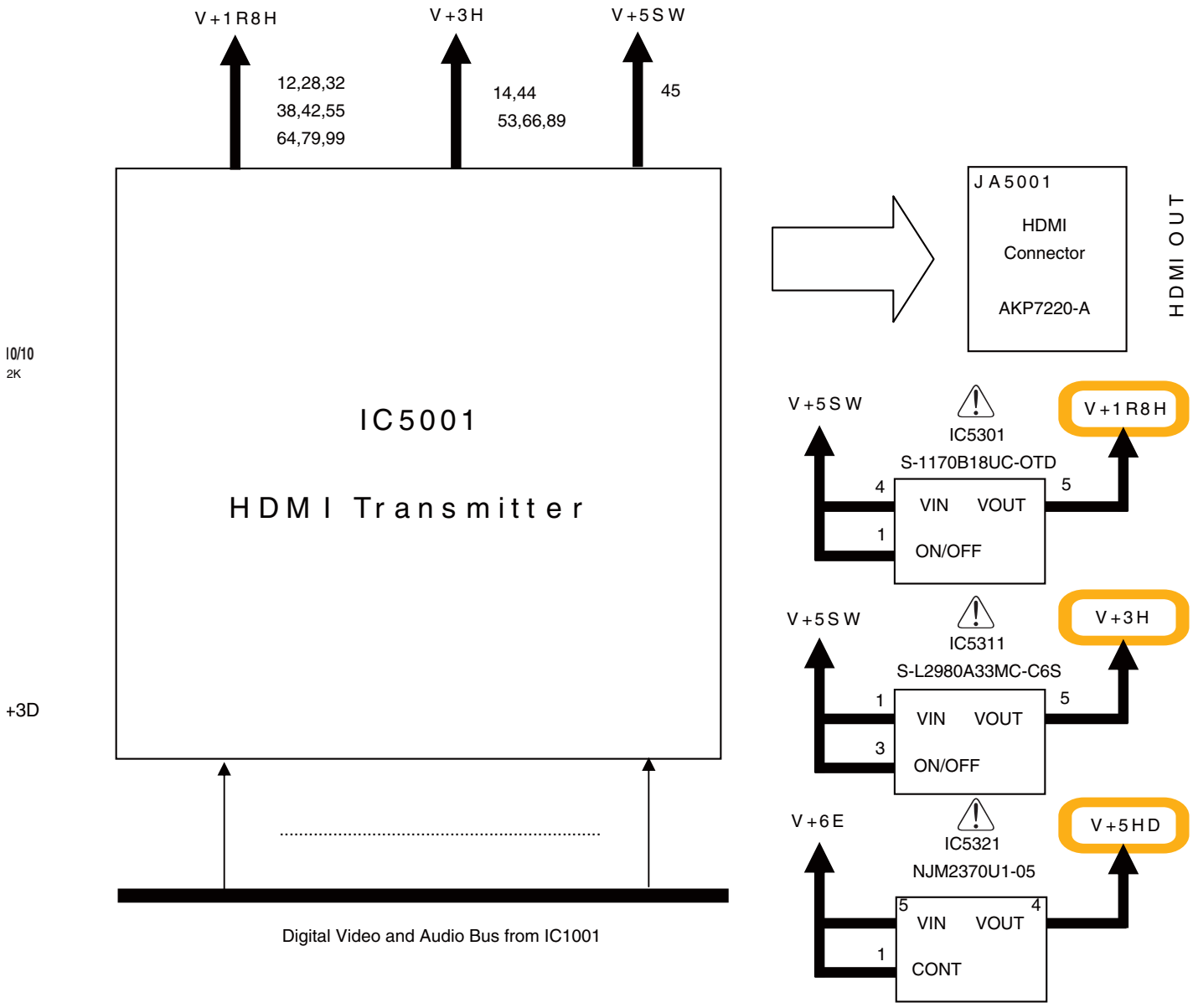

SR IN
JA4351
RKN1004-A
NM C4357
100p/50 C4356
0.1u/50 C4355
GND
680p/50 C4351
R4351 220
R4353 220
D4351 RB501V40
220k R4354
NM C4358
10k R4355
IC4351 TC7SH08FU(S1
INB INA GND VCC OUTY
V+5E
V+3E
C4352 0.1u/50
R4352 100
SCON_IR
F_IR
X4001 VSS1216-A
R4022 22
SCON_RQI
A 1/10
R4071 22k
IC4002 BD45202G
VDD VOUT ER SUB GND
R4072 100k
CN4401 VKN1620-A
V-23SW KEY0 KEY1 GND FLSTB GND FLCLK GND FLDATA GND V-3D GND V+12SW GND GND V-3E GND LED_HDMI GND LED_BLUE GND LED_PON GND LED_FLOFF V+5E IR LED_HD/DOOR_OPEN
F_KEY0 F_KEY1 FIP_STB FIP_SCK FIP_DAT V+3D V+12SW V+3E F_LED4 F_LEDPWM3 F_LEDPWM2 V+5E F_LED5 F_IR F_LED6/DOOR_OPEN
CTF1394-A L4410
C4401 0.1u/50
C4402 1000p/50
C4415 47u/35
C4416 1000p/50
C4417 NM
C4403 22p/50
C4404 22p/50
C4405 22p/50
C4406 1000p/50
C4407 0.1u/50
C4408 100u/16
C4414 0.1u/50
C4409 0.1u/50
C4410 1000p/50
C4411 0.1u/50
C4420 NM
C4421 NM
C4422 NM
C4423 NM
C4412 0.1u/50
C4413 1000p/50
C4418 NM
C4419 NM
R4401 NM
R4402 NM
R4403 NM
R4404 NM
GNDF
B CN1
NM 0.1u/16
C4203 C4202
V+1R8S V+1R1D
IC4202 NM
IC4201 BU4809F
NC VDD VOUT GND
LED_PON
Others VWV2376
L4414 CTF1306 NM
R4403 NM 0

A 6/10 MAIN ASSY
(VXX3326 : BDP-05FD)
(VXX3328 : BDP-51FD)

Ether



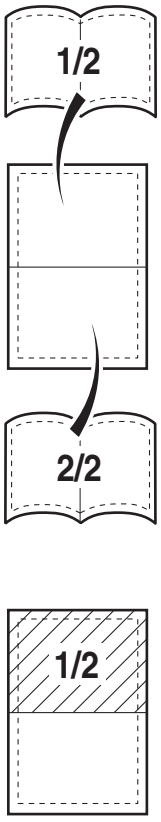
HDMI


V+1R8H
V+3H
V+5SW
12,28,32
38,42,55
64,79,99
14,44
53,66,89
45
IC5001
HDMI Transmitter
Digital Video and Audio Bus from IC1001
JA5001
HDMI
Connector
AKP7220-A
HDMI OUT
V+5SW
IC5301
S-1170B18UC-OTD
4
1
VIN
VOUT
ON/OFF
5
V+1R8H
V+5SW
IC5311
S-L2980A33MC-C6S
1
3
VIN
VOUT
ON/OFF
5
V+3H
V+6E
IC5321
NJM2370U1-05
5
1
VIN
VOUT
CONT
4
V+5HD

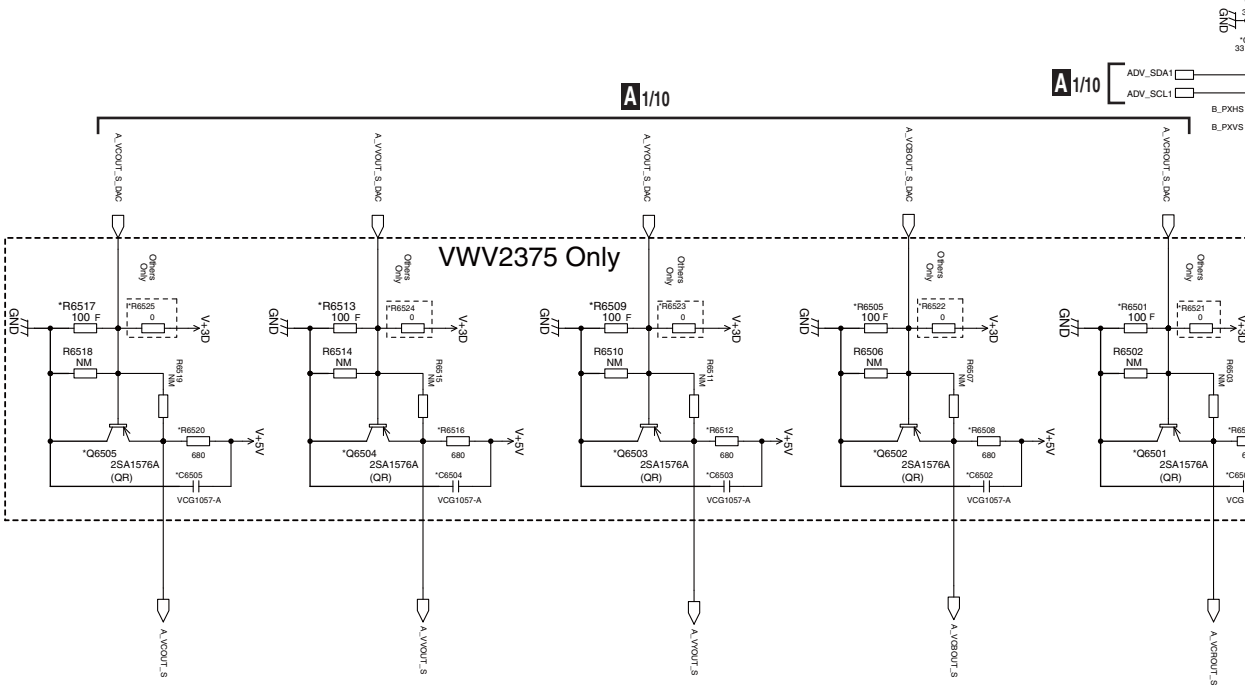
10.7 MAIN ASSY (7/10)

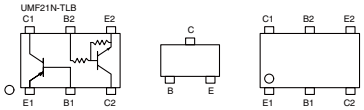
A 7/10 MAIN ASSY
(VXX3326 : BDP-05FD)
(VXX3328 : BDP-51FD)

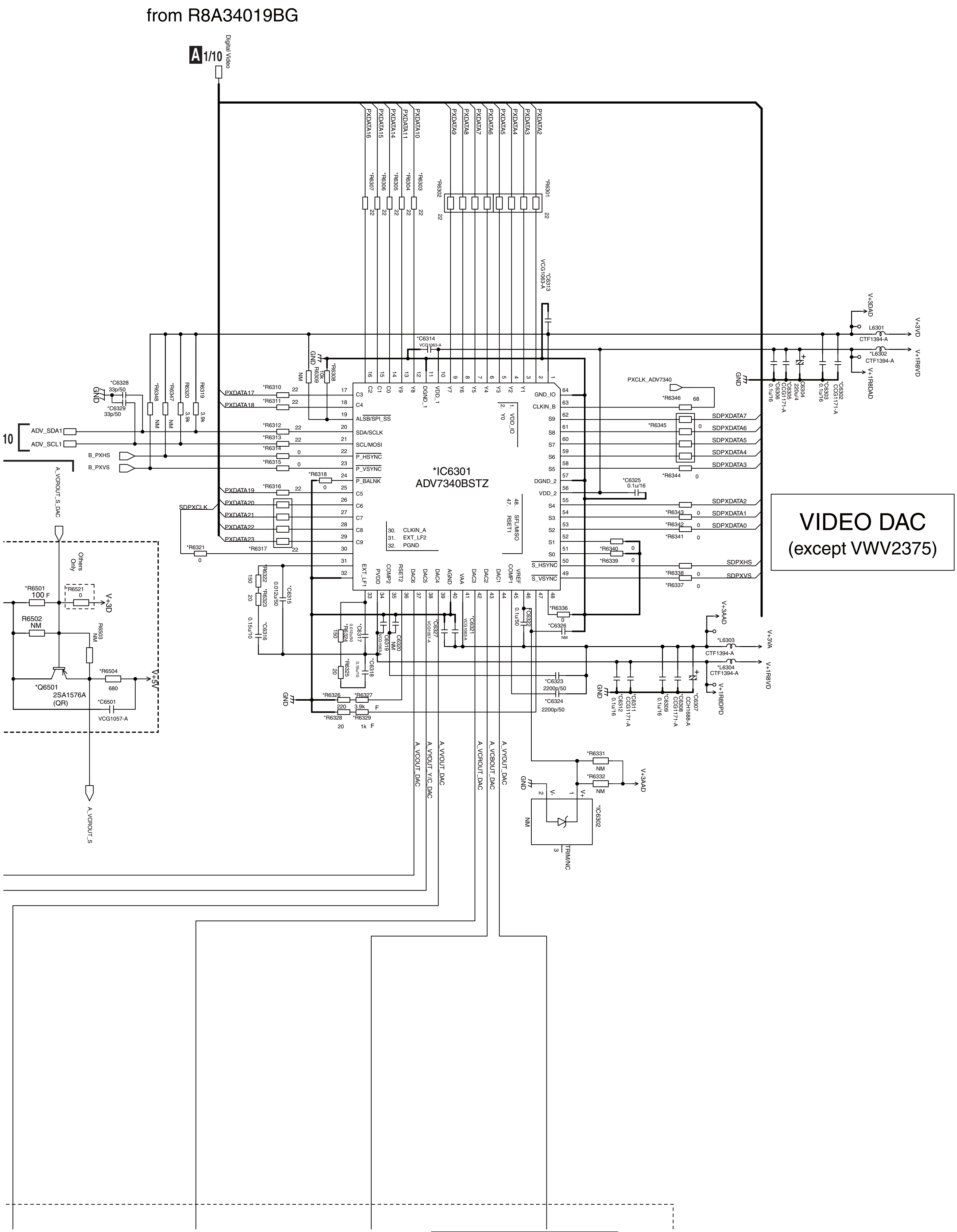
Large size SCH diagram

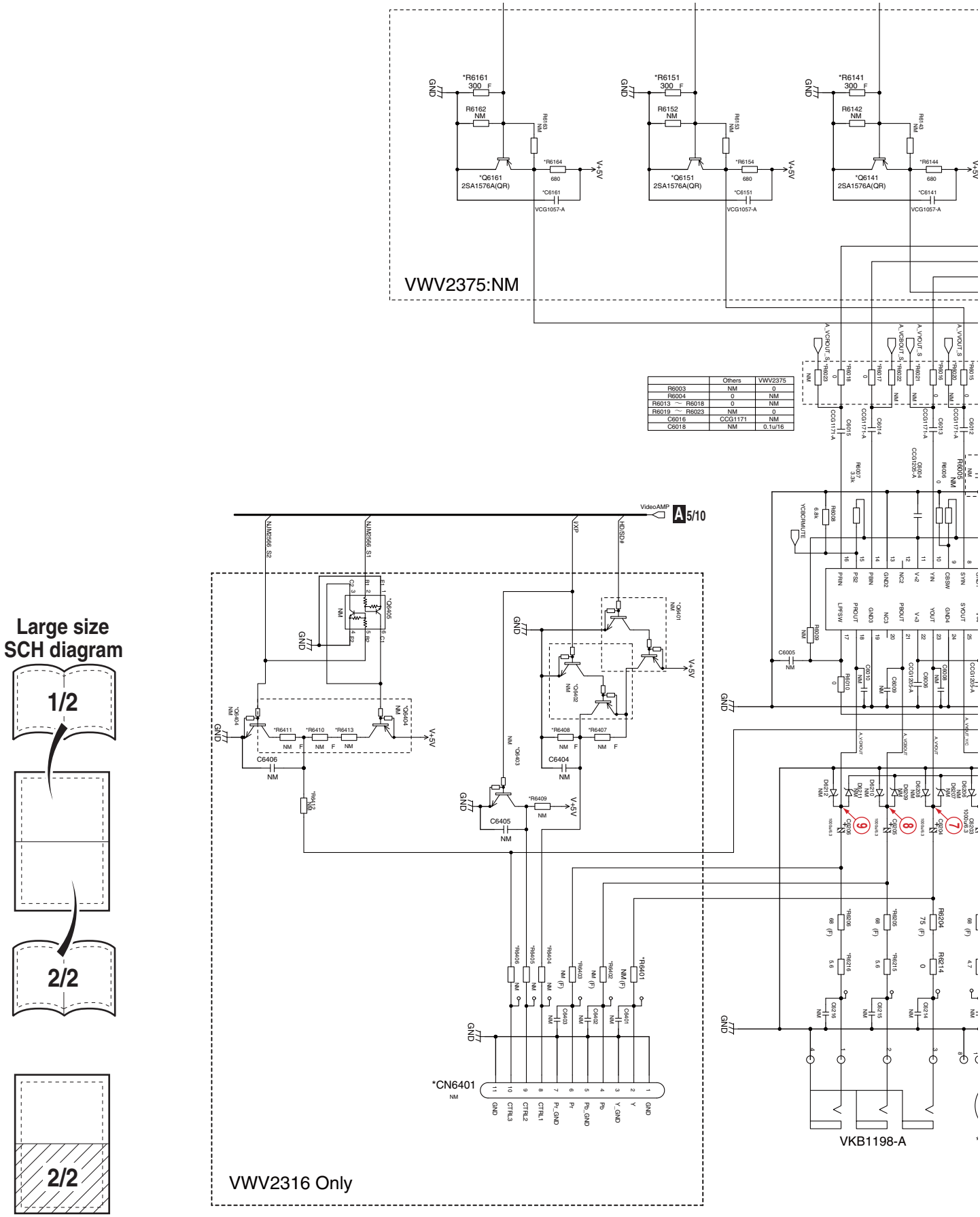


from R8A34019BG Video Out






from R8A34019BG
A 1/10
Digital Video
VIDEO DAC
(except VWV2375)
*IC6301
ADV7340BSTZ
PXDATA2
PXDATA3
PXDATA4
PXDATA5
PXDATA6
PXDATA7
PXDATA8
PXDATA9
PXDATA10
PXDATA11
PXDATA14
PXDATA15
PXDATA16
PXDATA17
PXDATA18
PXDATA19
PXDATA20
PXDATA21
PXDATA22
PXDATA23
*R6301
*R6302
*R6303
*R6304
*R6305
*R6306
*R6307
*C6313
VCG1063-A
*C6314
ADV_SDA1
ADV_SCL1
B_PXHS
B_PXVS
SDPXCLK
*C6328
33p/50
*C6329
33p/50
GND
*R6348
*R6347
R6320
R6319
3.9k
NM
R6309
*R6308
10k
C3
C4
ALSB/SPI_SS
SDA/SCLK
SCL/MOSI
P_HSYNC
P_VSYNC
P_BALNK
C5
C6
C7
C8
C9
30. CLKIN_A
31. EXT_LF2
32. PGND
1. VDD_IO
2. Y0
47. RSET1
48. SFL/MISO
GND_IO
CLKIN_B
S9
S8
S7
S6
S5
DGND_2
VDD_2
S4
S3
S2
S1
S0
S_HSYNC
S_VSYNC
EXT_LF1
PVDD
COMP2
RSET2
DAC6
DAC5
DAC4
AGND
VAA
DAC3
DAC2
DAC1
COMP1
VREF
PXCLK_ADV7340
*R6346
68
*R6345
*R6344
*R6343
*R6342
*R6341
*R6340
*R6339
*R6338
*R6337
*R6336
SDPXDATA7
SDPXDATA6
SDPXDATA5
SDPXDATA4
SDPXDATA3
SDPXDATA2
SDPXDATA1
SDPXDATA0
SDPXHS
SDPXVS
*C6325
0.1u/16
V+3DAD
L6301
CTF1394-A
V+3VD
*L6302
V+1R8VD
V+1R8DAD
*C6302
CCG1171-A
*C6303
0.1u/16
C6304
220u/4
*C6305
*C6306
*R6310
*R6311
*R6312
*R6313
*R6314
*R6315
*R6316
*R6317
*R6318
*R6321
*R6322
*R6323
*C6315
0.012u/50
*C6316
0.15u/10
*R6324
*R6325
*C6317
*C6318
C6319
C6320
*C6327
VCG1057-A
*C6321
*C6322
0.1u/50
*C6326
*C6323
2200p/50
*C6324
2200p/50
*R6326
220
*R6327
3.9k
*R6328
20
*R6329
1k
V+3AAD
*L6303
V+3VA
*L6304
V+1R8VD
V+1R8DPD
*C6307
CCH1688-A
*C6308
CCG1171-A
*C6309
0.1u/16
*C6311
CCG1171-A
*C6312
0.1u/16
A_VCOUT_DAC
A_VYOUT_Y/C_DAC
A_VVOUT_DAC
A_VCROUT_DAC
A_VCBOUT_DAC
A_VYOUT_DAC
*R6331
*R6332
NM
*IC6302
TRIM/NC
A_VCROUT_S_DAC
Others
Only
*R6501
100 F
*R6521
V+3D
R6502
NM
R6503
*R6504
680
V+5V
*Q6501
2SA1576A
(QR)
*C6501
VCG1057-A
A_VCROUT_S

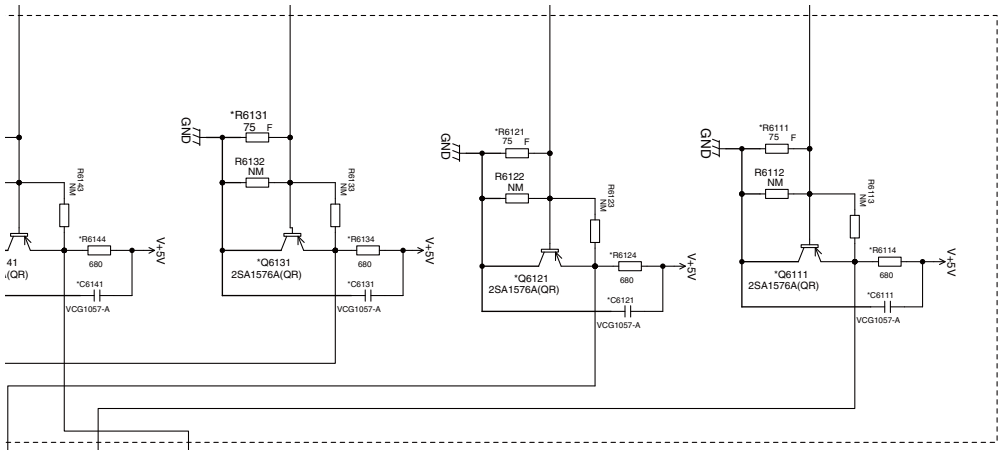


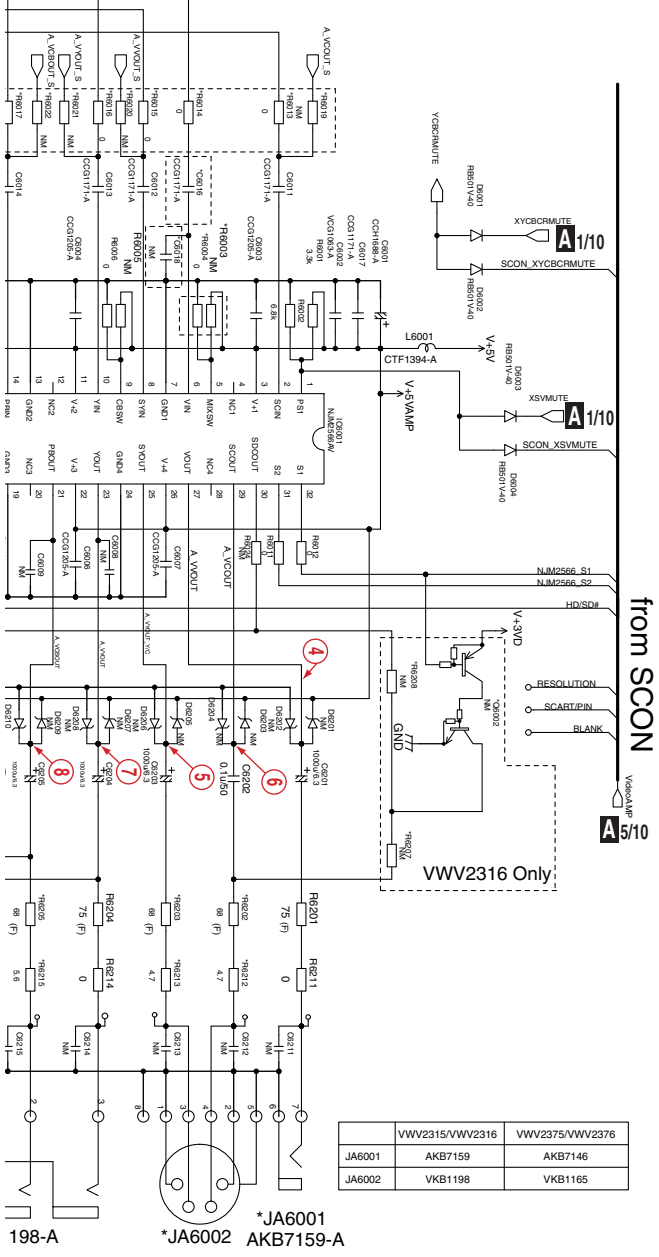
Large size SCH diagram

1/2

2/2

2/2



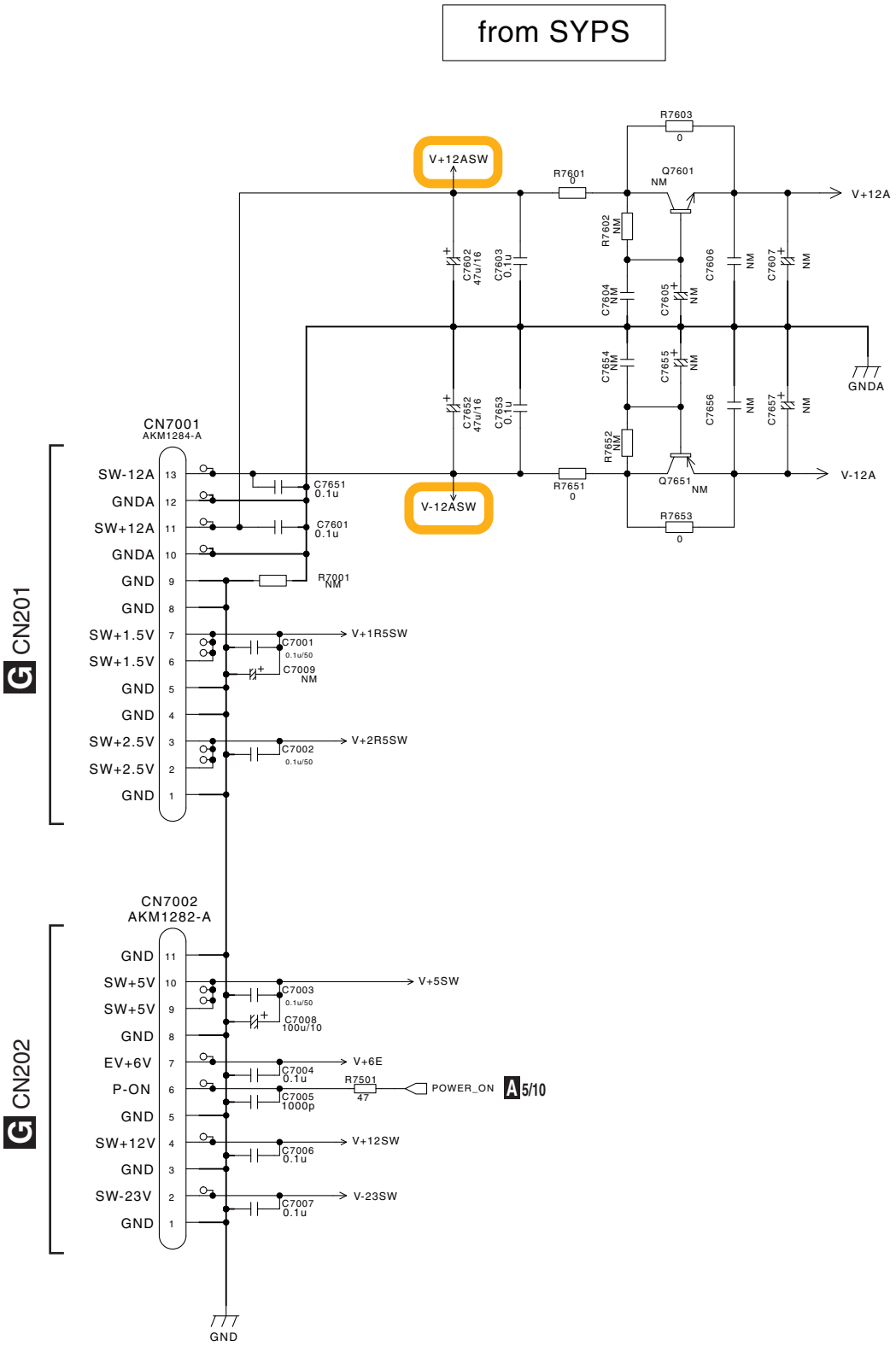


VIDEO AMP

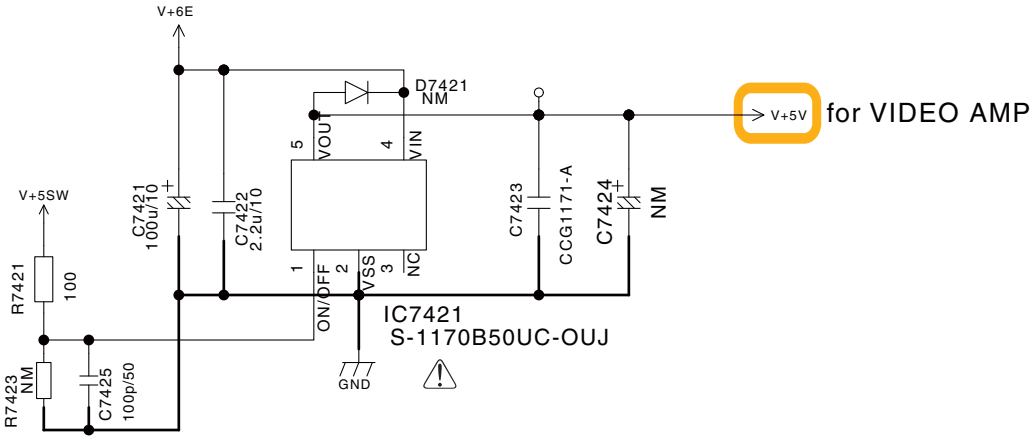
	VWV2315/VWV2316	VWV2375/VWV2376
JA6001	AKB7159	AKB7146
JA6002	VKB1198	VKB1165

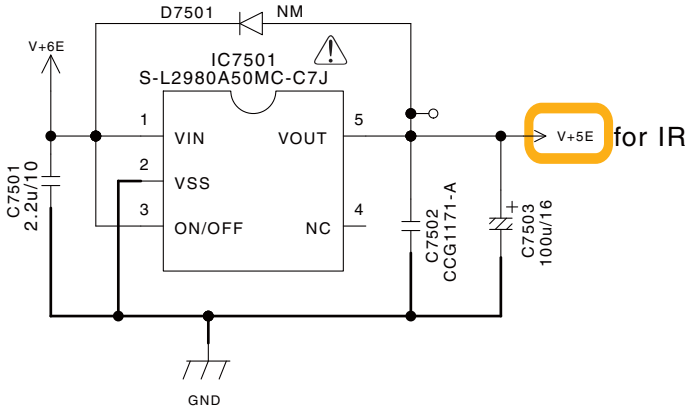
10.8 MAIN ASSY (8/10)

A 8/10 MAIN ASSY
(VXX3326 : BDP-05FD)
(VXX3328 : BDP-51FD)

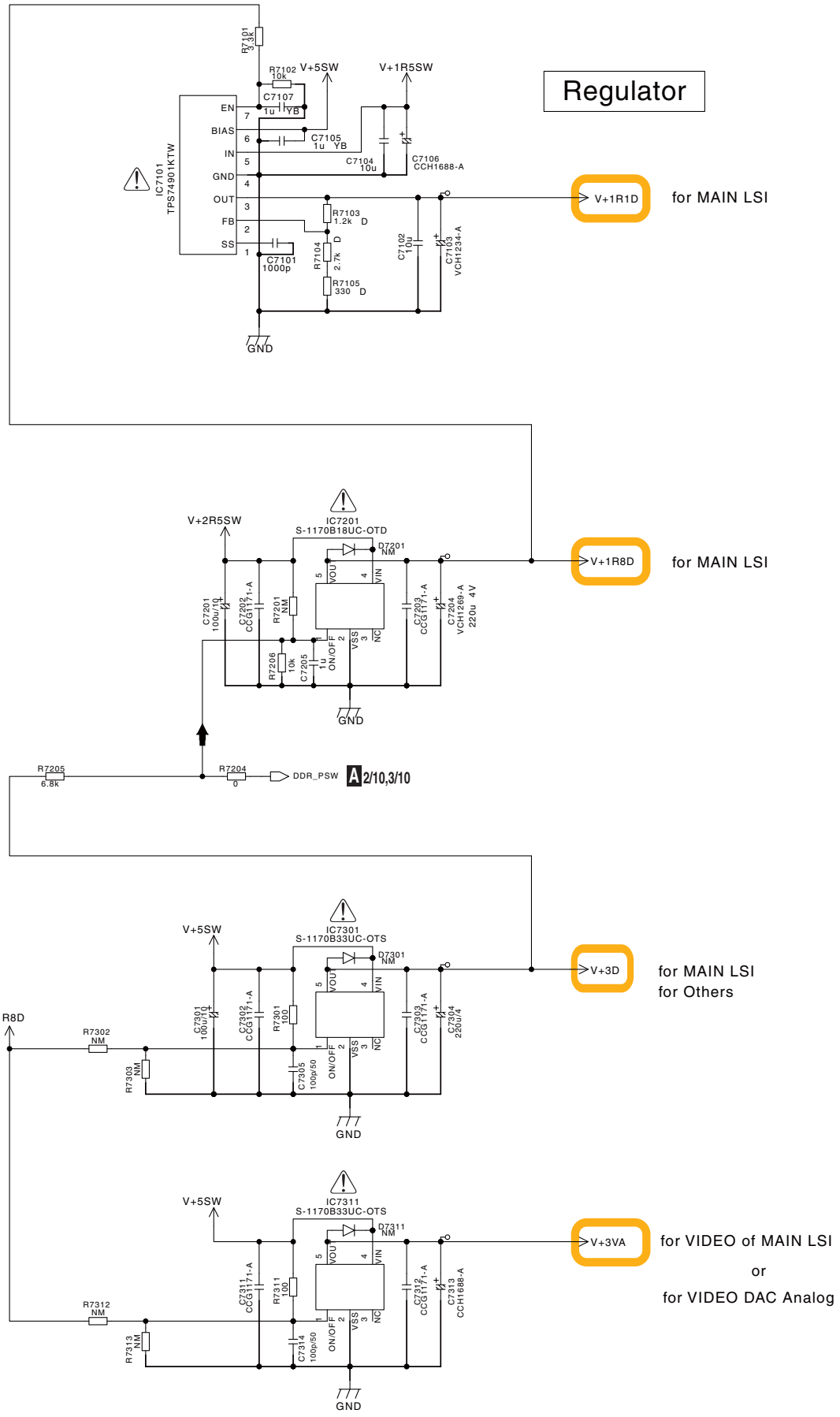


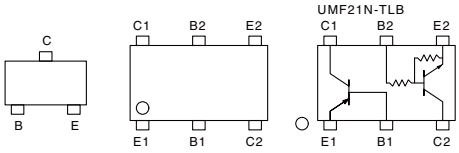
Regulator

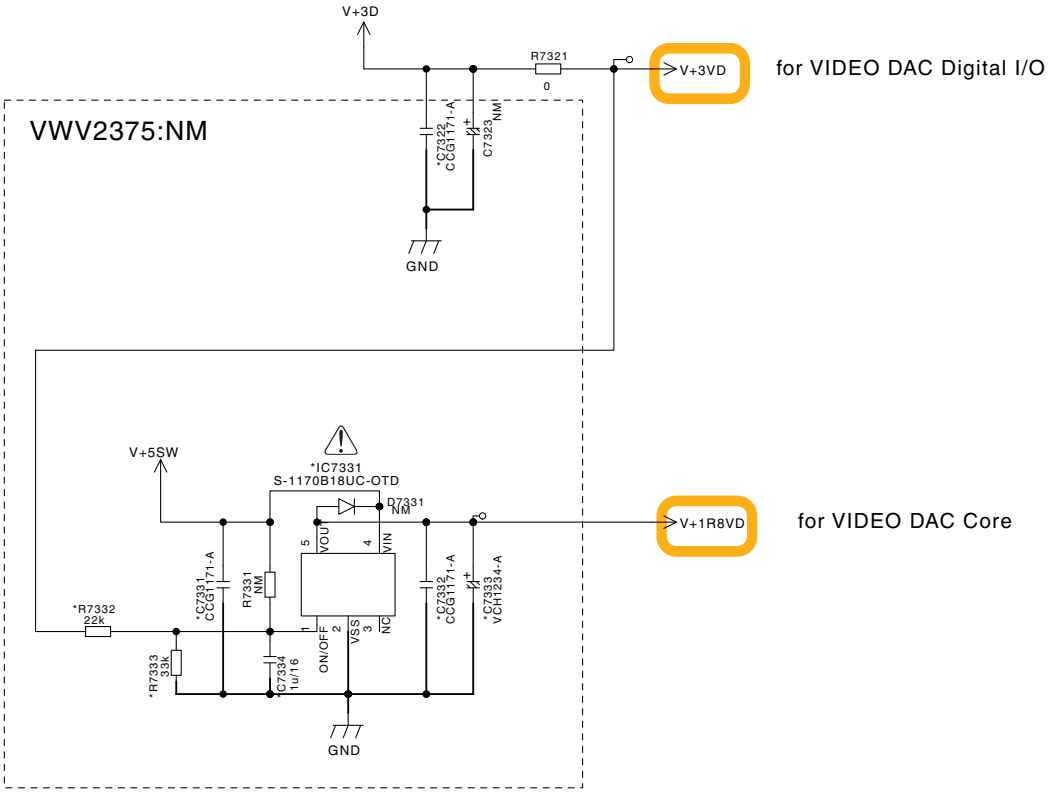

V+6E
D7421
NM
V+5V
for VIDEO AMP
V+5SW
C7421
100u/10
C7422
2.2u/10
C7423
CCG1171-A
C7424
NM
R7421
100
R7423
NM
C7425
100p/50
VOUT
VIN
ON/OFF
VSS
NC
IC7421
S-1170B50UC-OUJ
GND


D7501
NM
V+6E
IC7501
S-L2980A50MC-C7J
VIN
VOUT
VSS
ON/OFF
NC
V+5E
for IR
C7501
2.2u/10
C7502
CCG1171-A
C7503
100u/16
GND

10.9 MAIN ASSY (9/10)




C
B
E
C1
B2
E2
E1
B1
C2
UMF21N-TLB
C1
B2
E2
E1
B1
C2


V+3D
R7321
0
V+3VD
for VIDEO DAC Digital I/O
VWV2375:NM
*C7322
CCG1171-A
C7323
NM
GND
V+5SW
*IC7331
S-1170B18UC-OTD
D7331
NM
V+1R8VD
for VIDEO DAC Core
*C7331
CCG1171-A
R7331
NM
*R7332
22k
*R7333
33k
*C7334
1u/16
VOU
VIN
ON/OFF
VSS
NC
*C7332
CCG1171-A
*C7333
VCH1234-A
GND

10.10 MAIN ASSY (10/10)

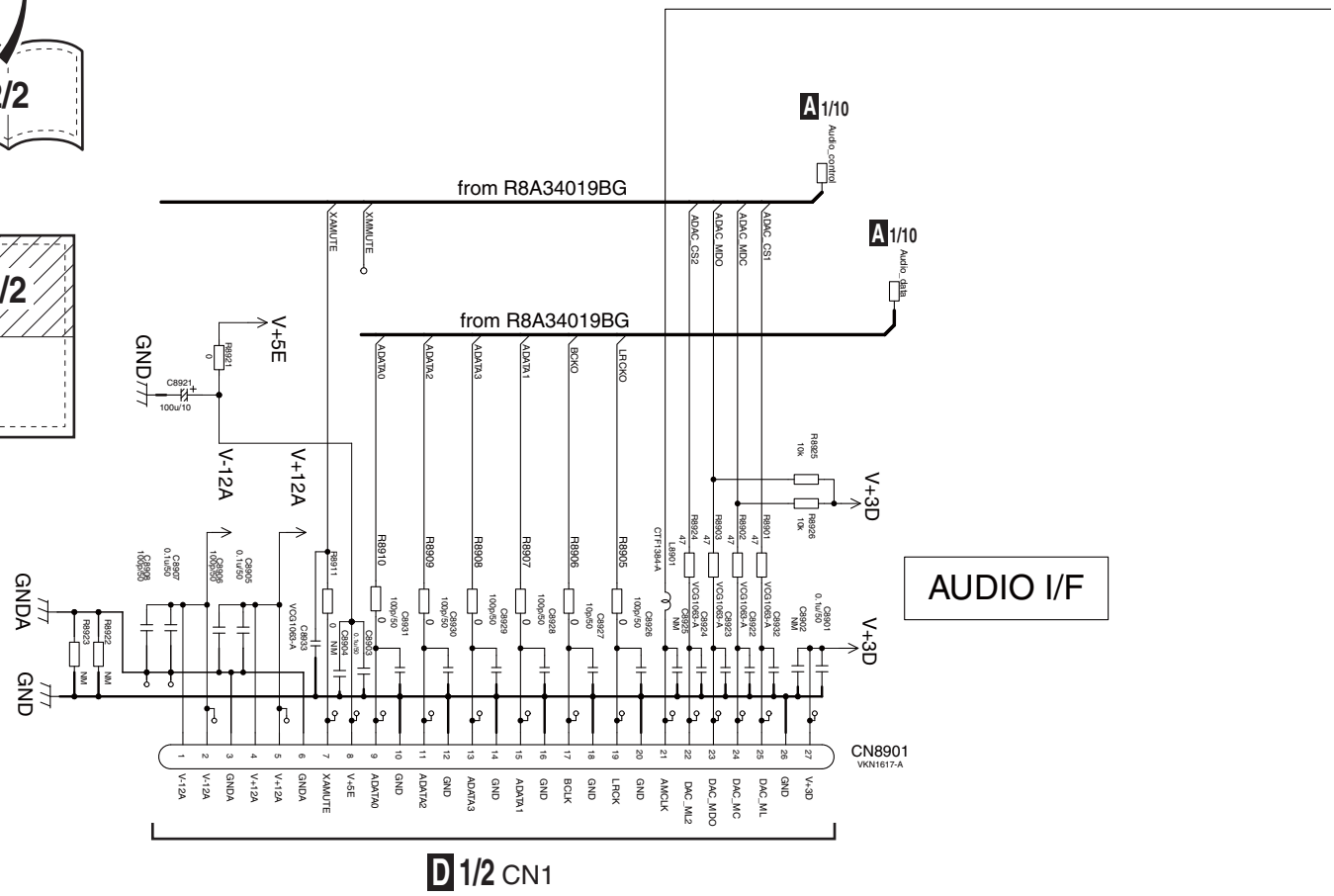
Large size SCH diagram

1/2

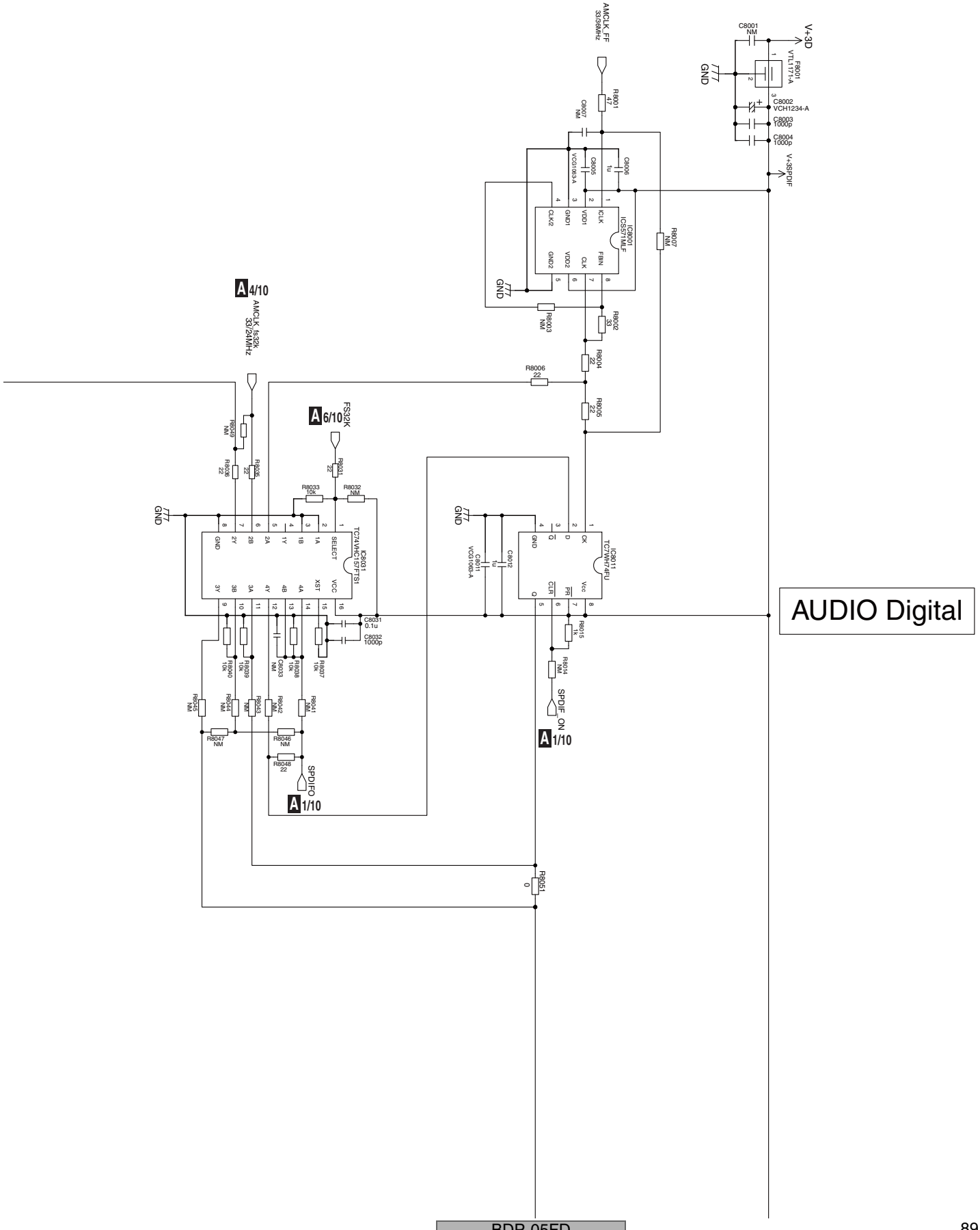
2/2

1/2

A 10/10 **MAIN ASSY**
(VXX3326 : BDP-05FD)
(VXX3328 : BDP-51FD)



AUDIO I/F


AUDIO Digital
AMCLK_FF 33/36MHz
AMCLK_fs32k 33/24MHz
FS32K
SPDIFO
SPDIF_ON
V+3D
V+3SPDIF
GND
A 4/10
A 6/10
A 1/10
A 1/10
IC8031 TC74VHC157FTS1
IC8011 TC7WH74FU
IC8001 ICS571MLF
C8001 NM
F8001 VTL171-A
C8002 VCH1234-A
C8003 1000p
C8004 1000p
C8005 1u
C8006 1u
C8007 NM
C8011 1u VCG1083-A
C8012 1u
C8031 0.1u
C8032 1000p
C8033 NM
R8001 47
R8002 33
R8003 NM
R8004 22
R8005 22
R8006 22
R8007 NM
R8014 NM
R8015 1k
R8027 10k
R8028 10k
R8029 10k
R8030 22
R8031 22
R8032 NM
R8033 10k
R8034 NM
R8035 22
R8036 NM
R8037 NM
R8038 10k
R8039 10k
R8040 10k
R8041 NM
R8042 NM
R8043 NM
R8044 NM
R8045 NM
R8046 NM
R8047 NM
R8048 22
R8051 0

A

B

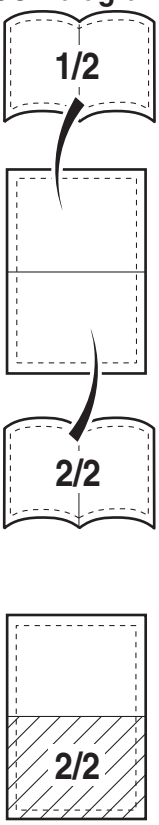
C

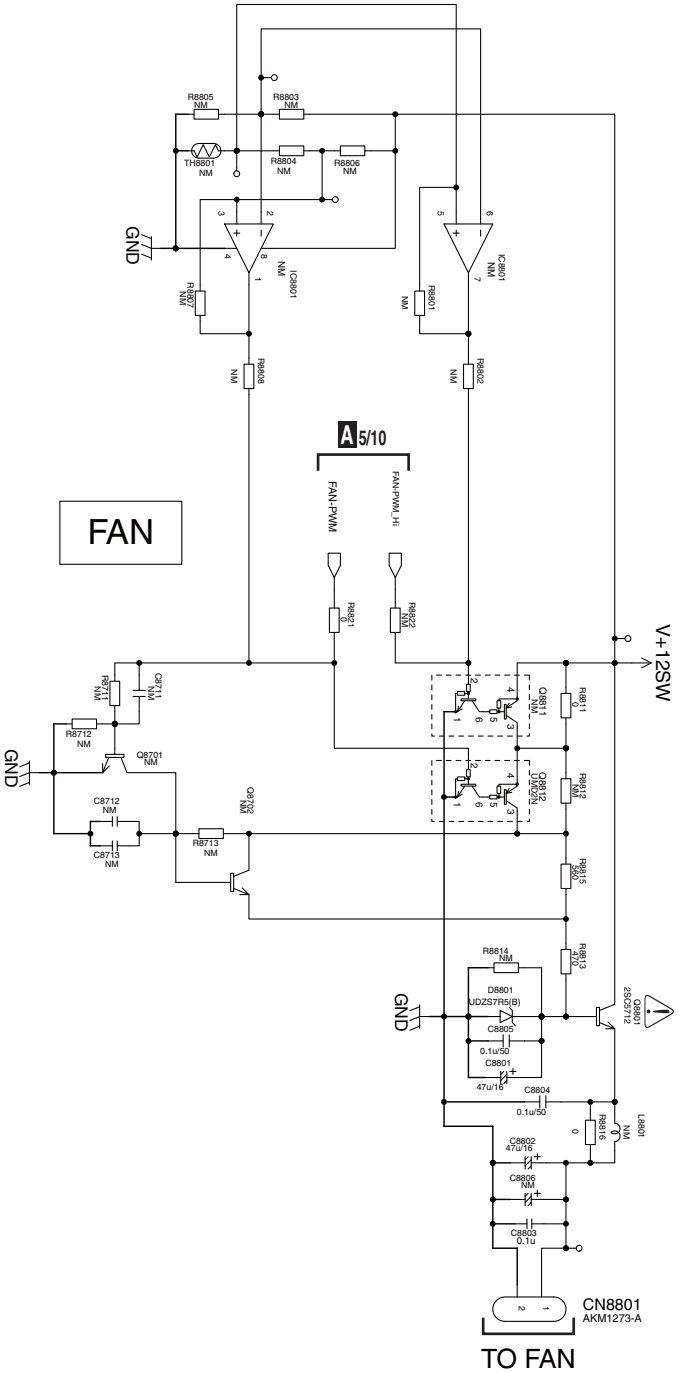
D

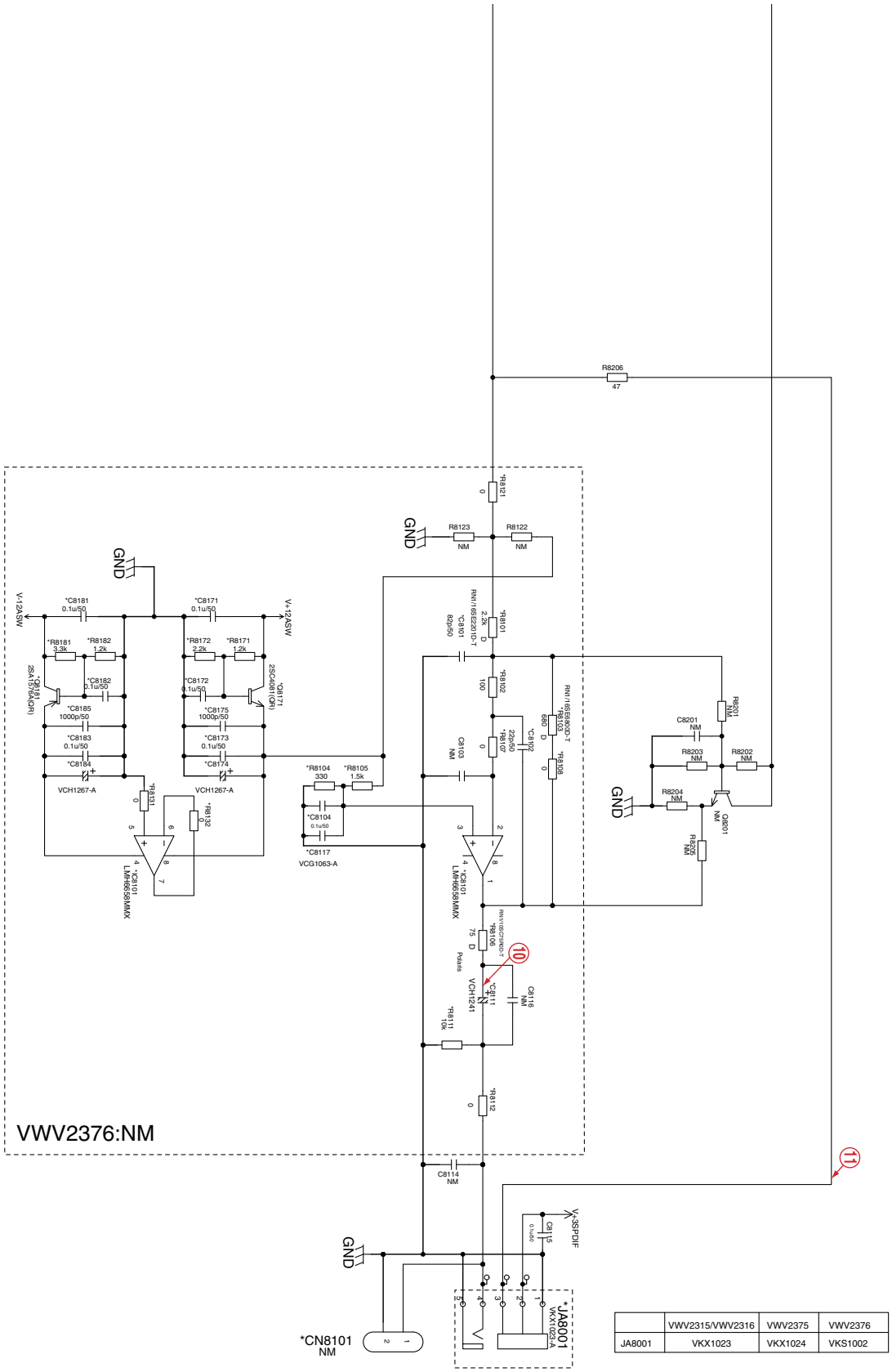
E

F

Large size SCH diagram

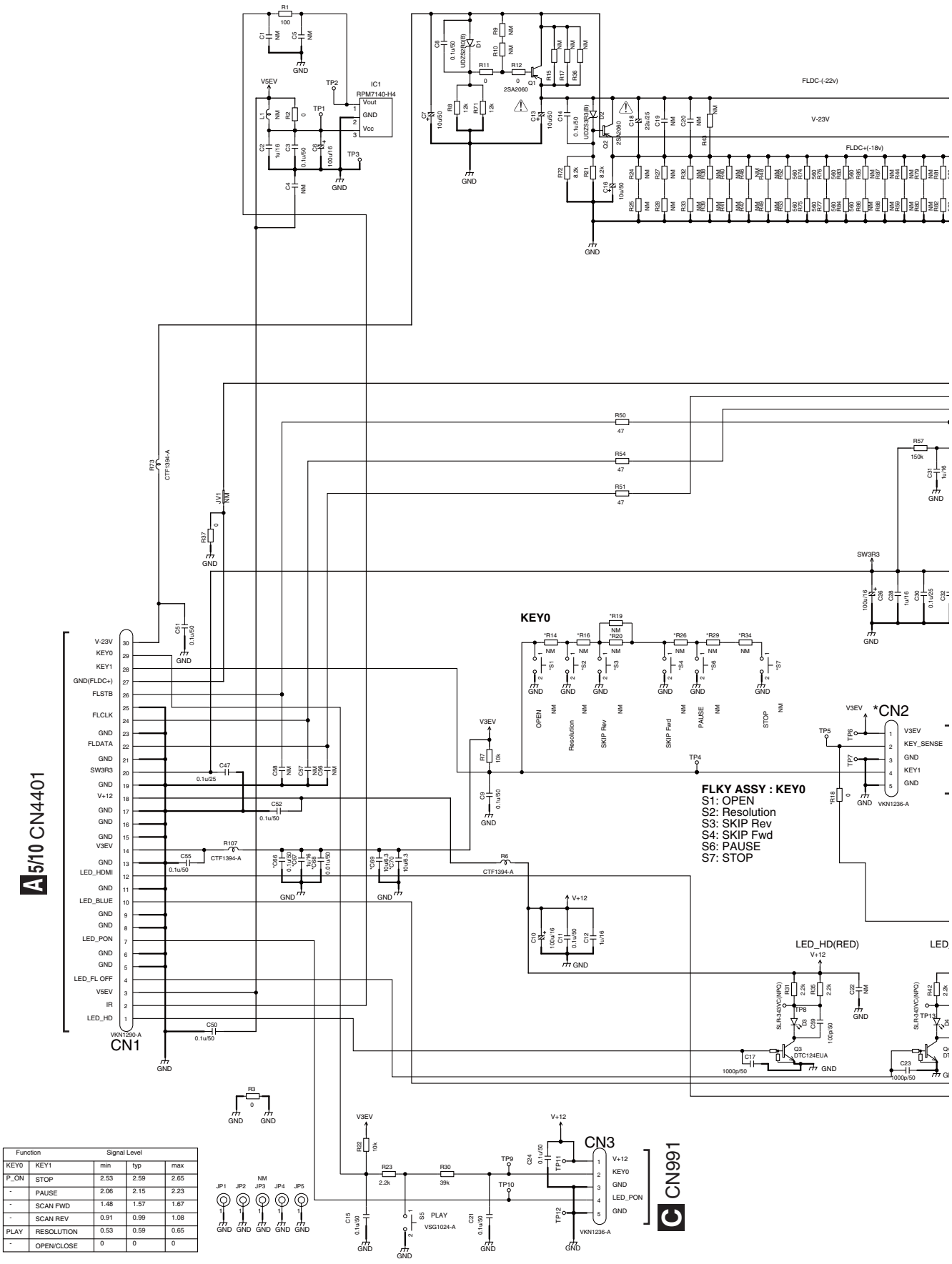






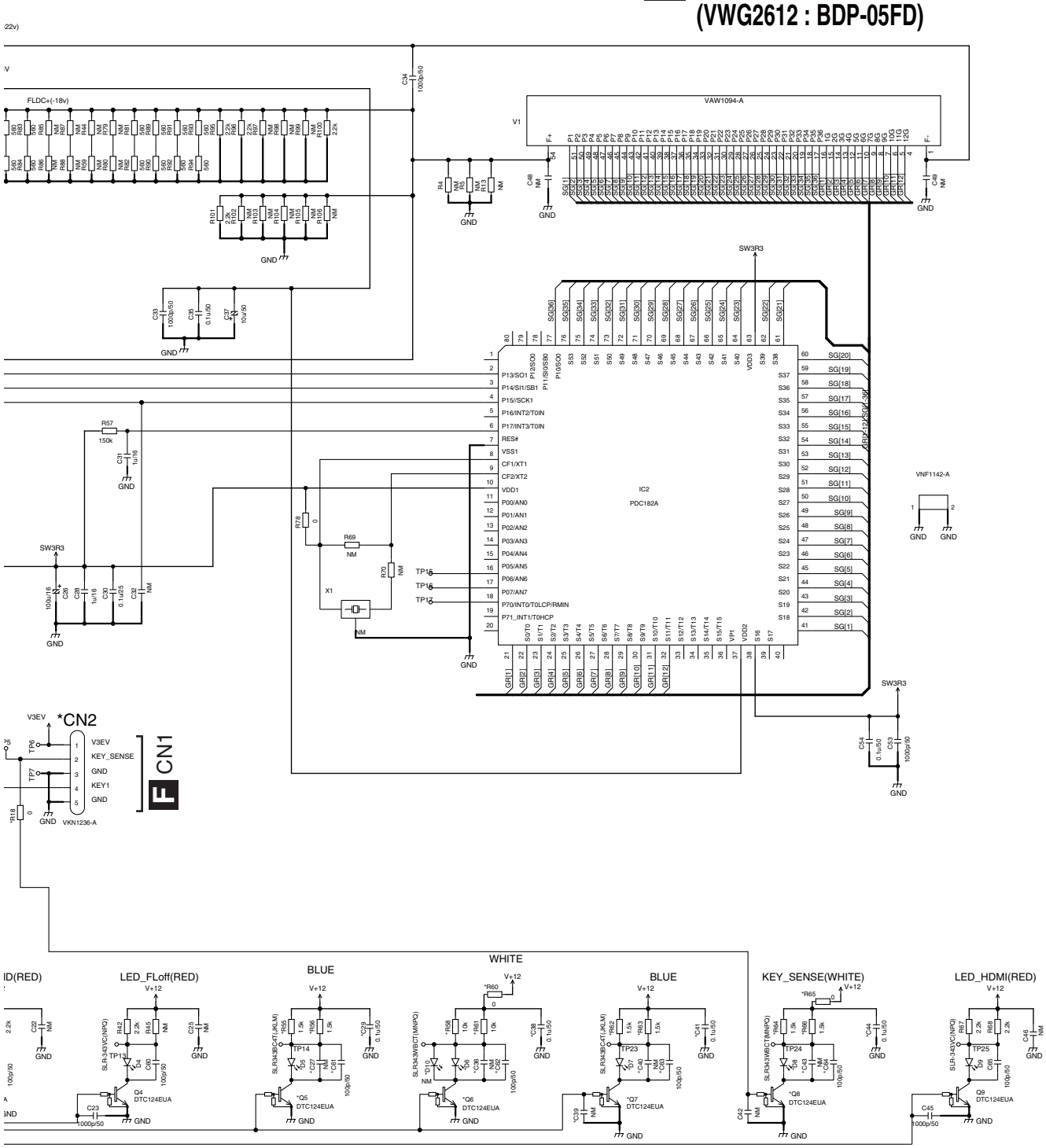
	VWV2315/VWV2316	VWV2375	VWV2376
JA8001	VKX1023	VKX1024	VKS1002

10.11 FLKY ASSY (BDP-05FD)

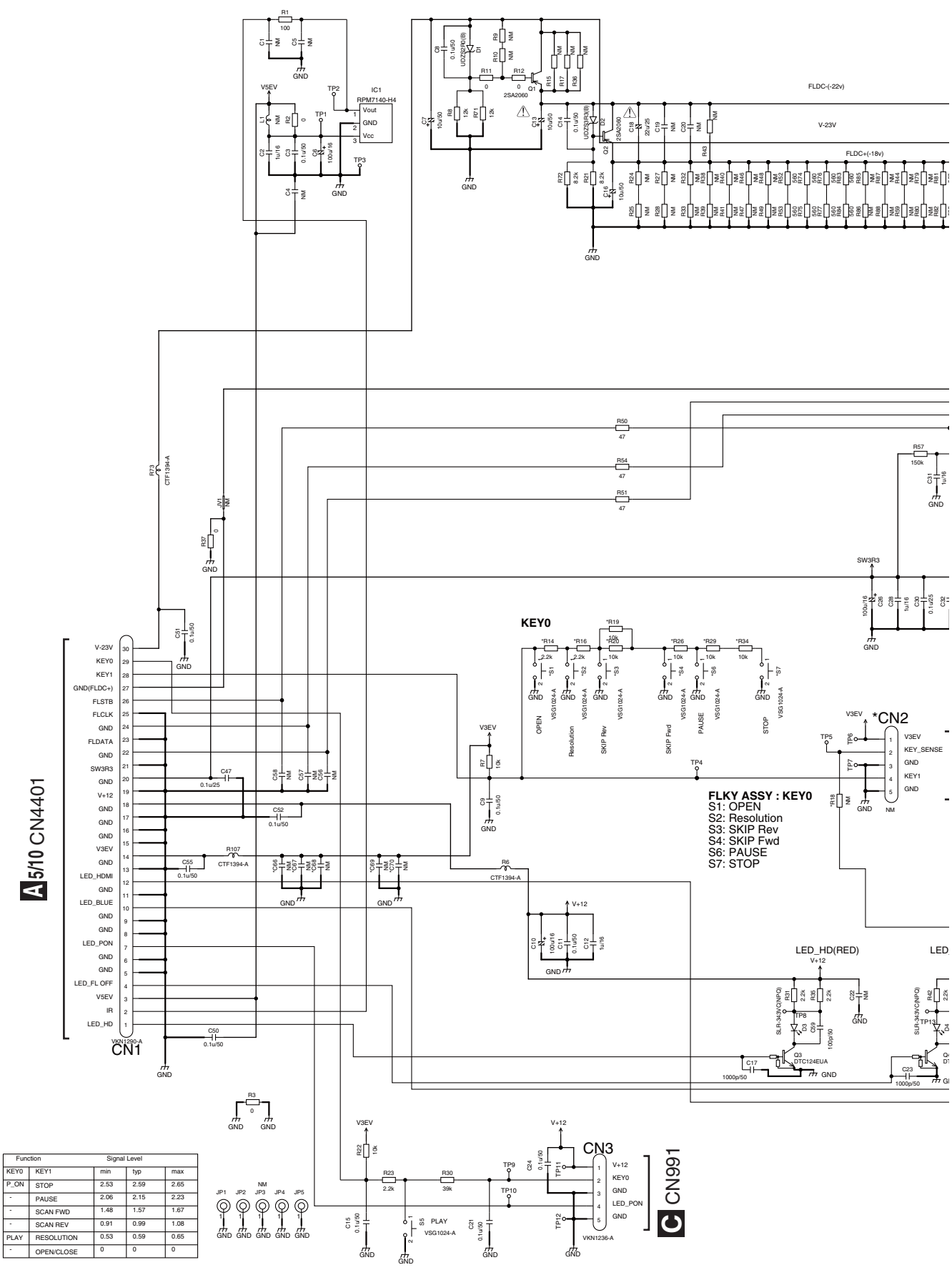


Function		Signal Level		
KEY0	KEY1	min	typ	max
P_ON	STOP	2.53	2.59	2.65
-	PAUSE	2.06	2.15	2.23
-	SCAN FWD	1.48	1.57	1.67
-	SCAN REV	0.91	0.99	1.08
PLAY	RESOLUTION	0.53	0.59	0.65
-	OPEN/CLOSE	0	0	0

B FLKY ASSY (VWG2612 : BDP-05FD)

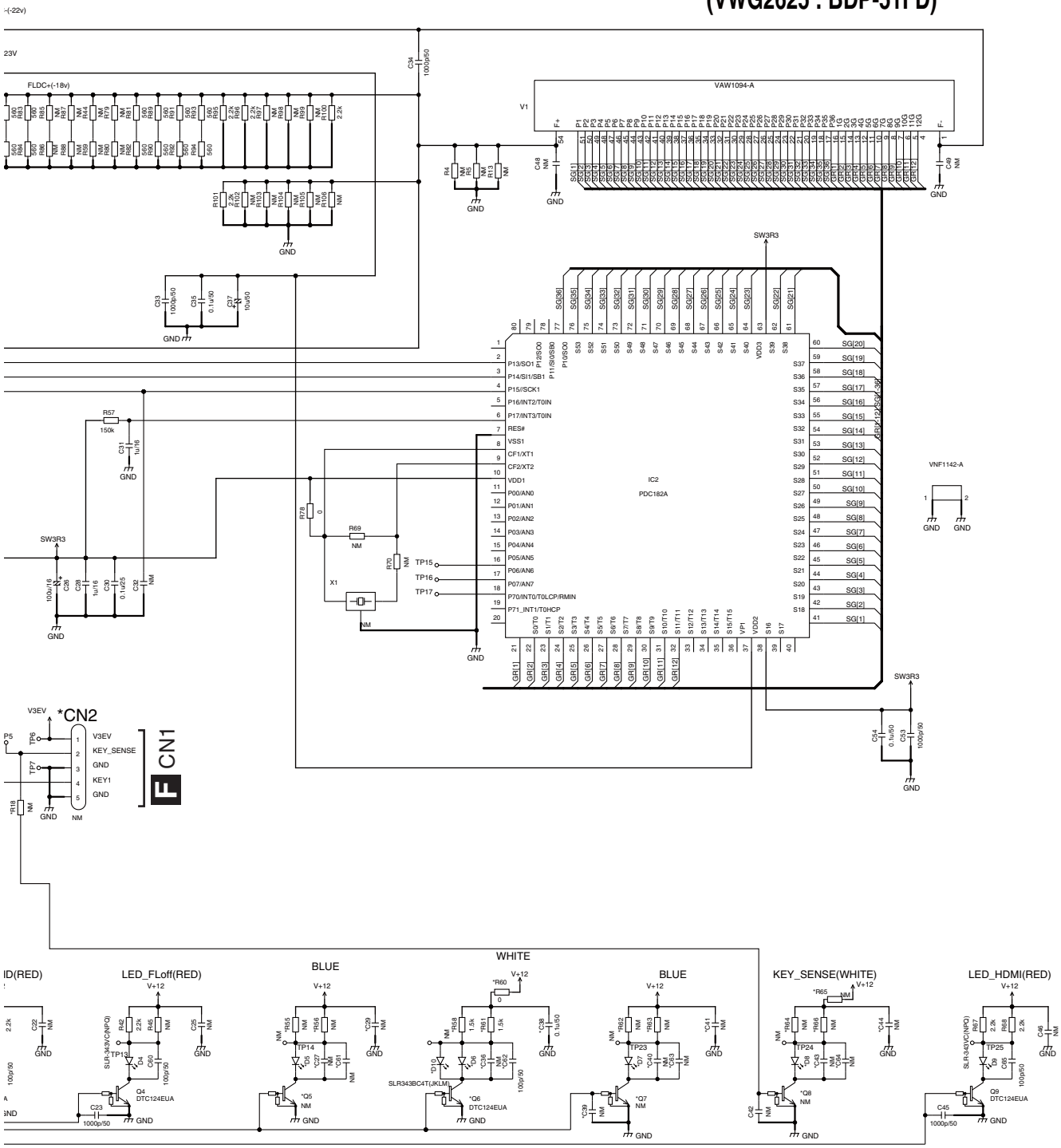


10.12 FLKY ASSY (BDP-51FD)



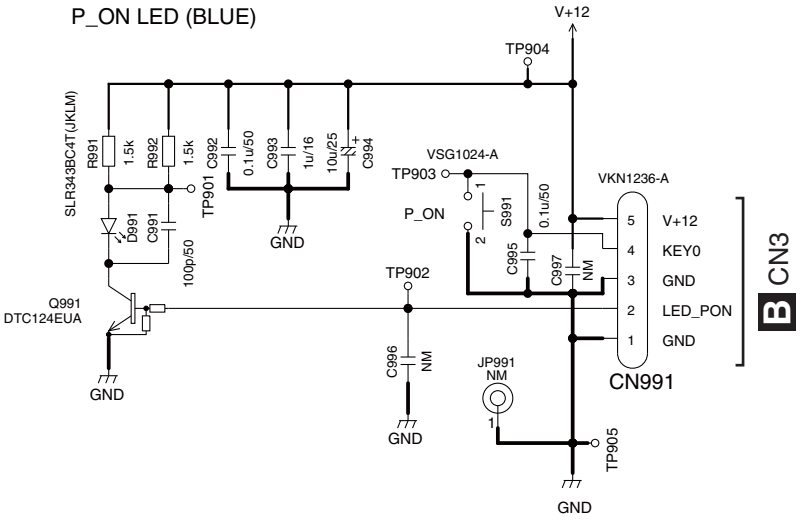
Function		Signal Level		
KEY0	KEY1	min	typ	max
P_ON	STOP	2.53	2.59	2.65
-	PAUSE	2.06	2.15	2.23
-	SCAN FWD	1.48	1.57	1.67
-	SCAN REV	0.91	0.99	1.08
PLAY	RESOLUTION	0.53	0.59	0.65
-	OPEN/CLOSE	0	0	0

B FLKY ASSY
(VWG2625 : BDP-51FD)



10.13 PSWB ASSY

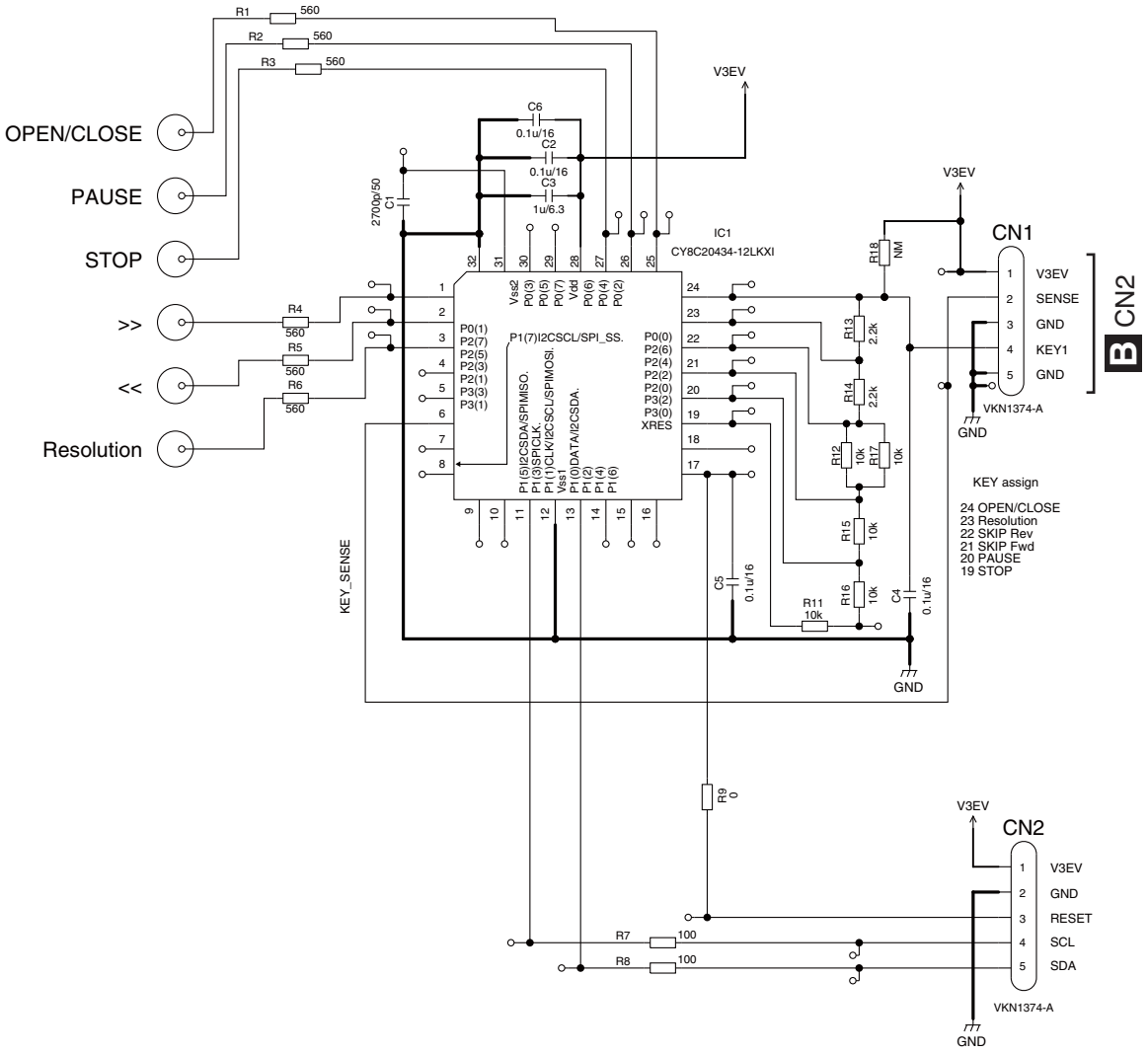
C PSWB ASSY (VWG2613)



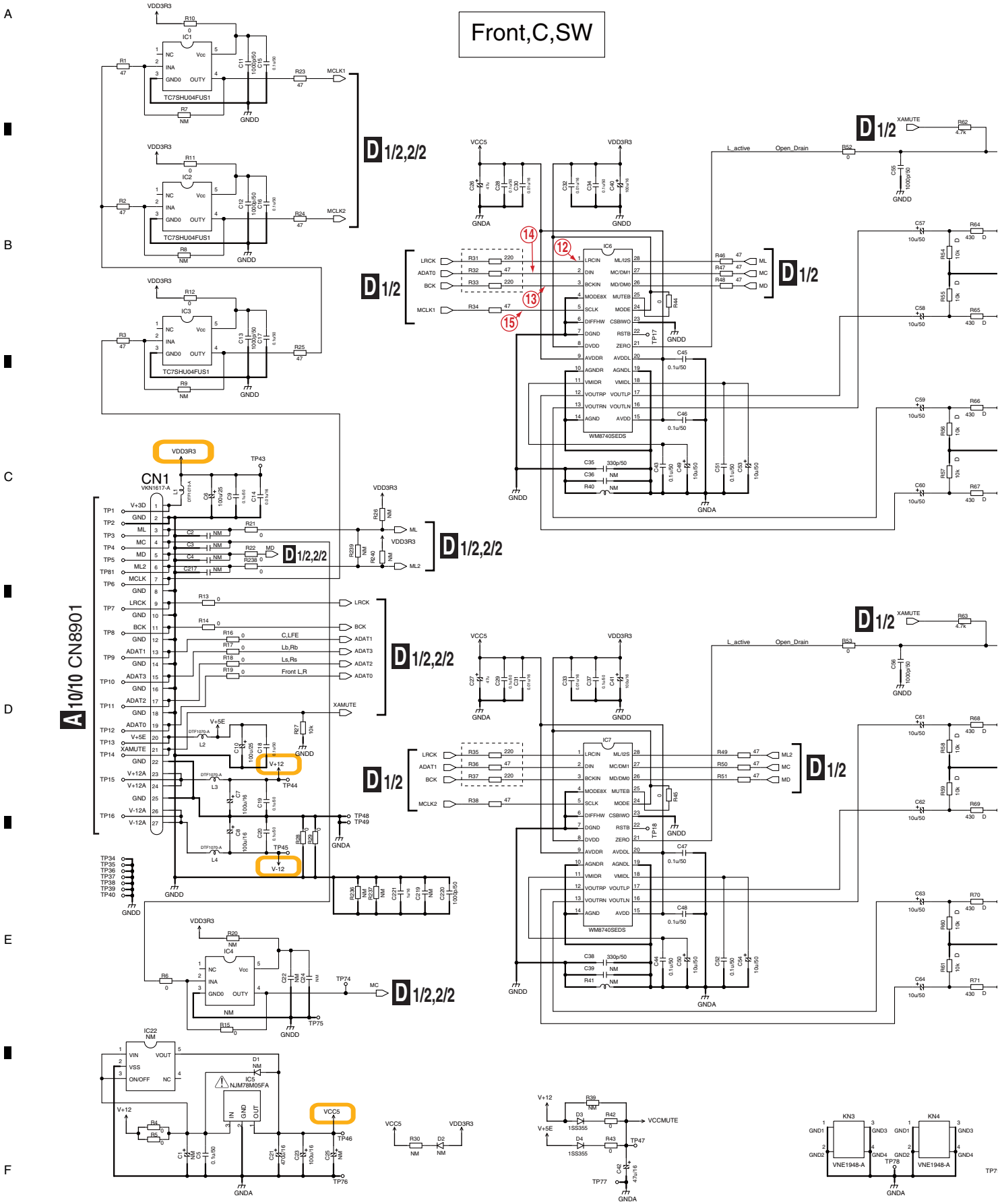
10.14 CAPK ASSY

F CAPK ASSY (VWG2614 : BDP-05FD only)

Capacitance sense KEY

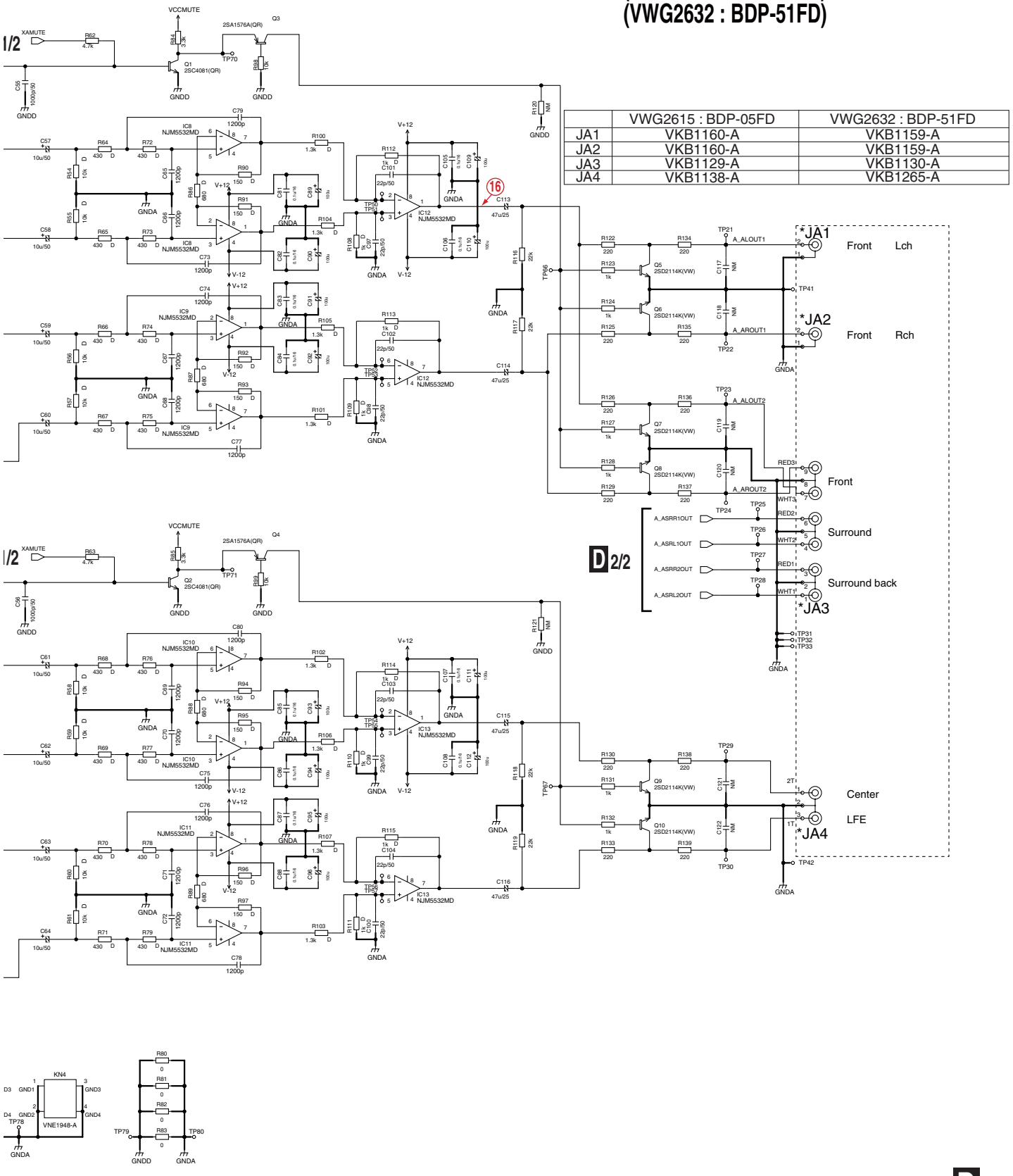


10.15 AUJB ASSY (1/2)

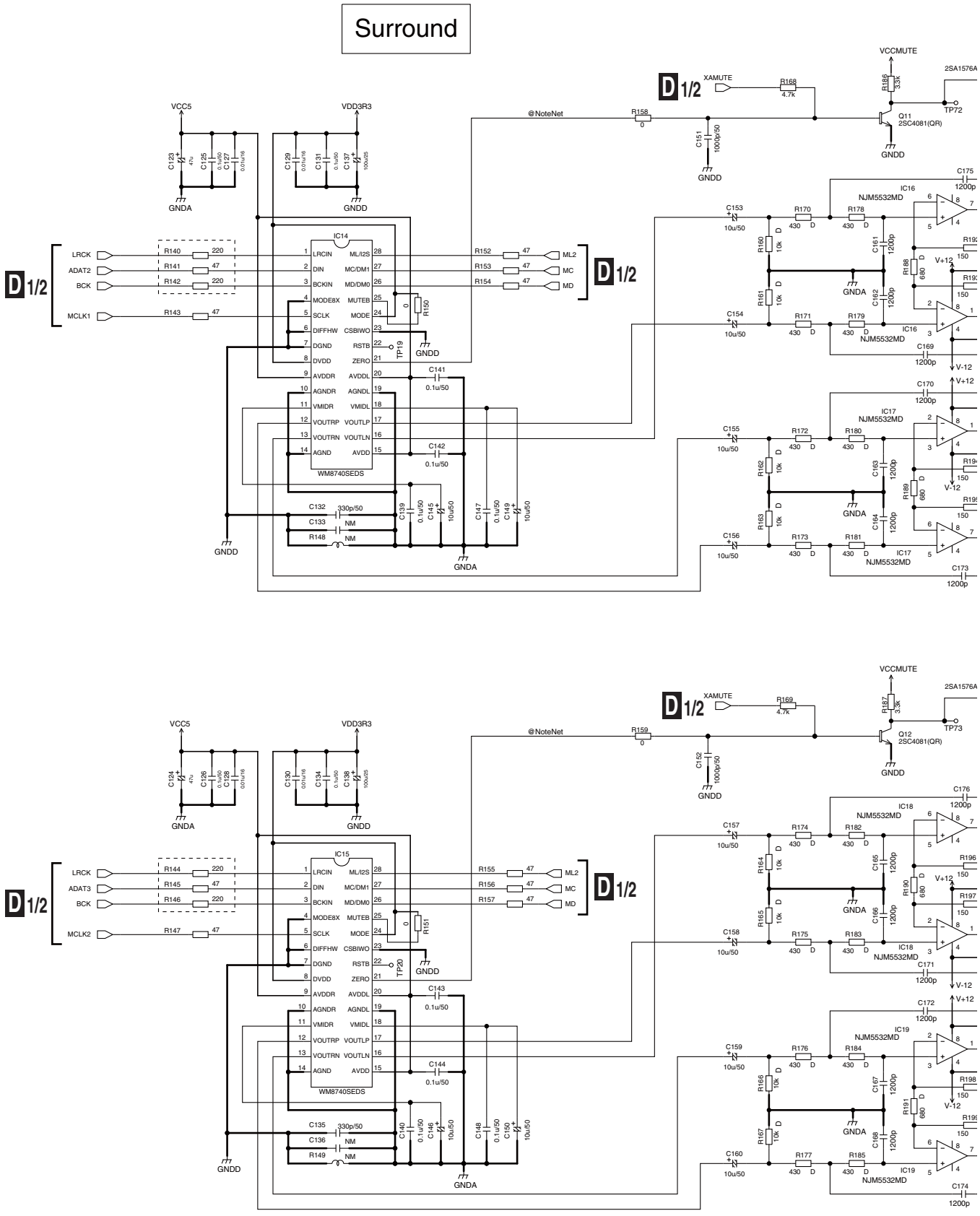


D 1/2 AUJB ASSY
(VWG2615 : BDP-05FD)
(VWG2632 : BDP-51FD)

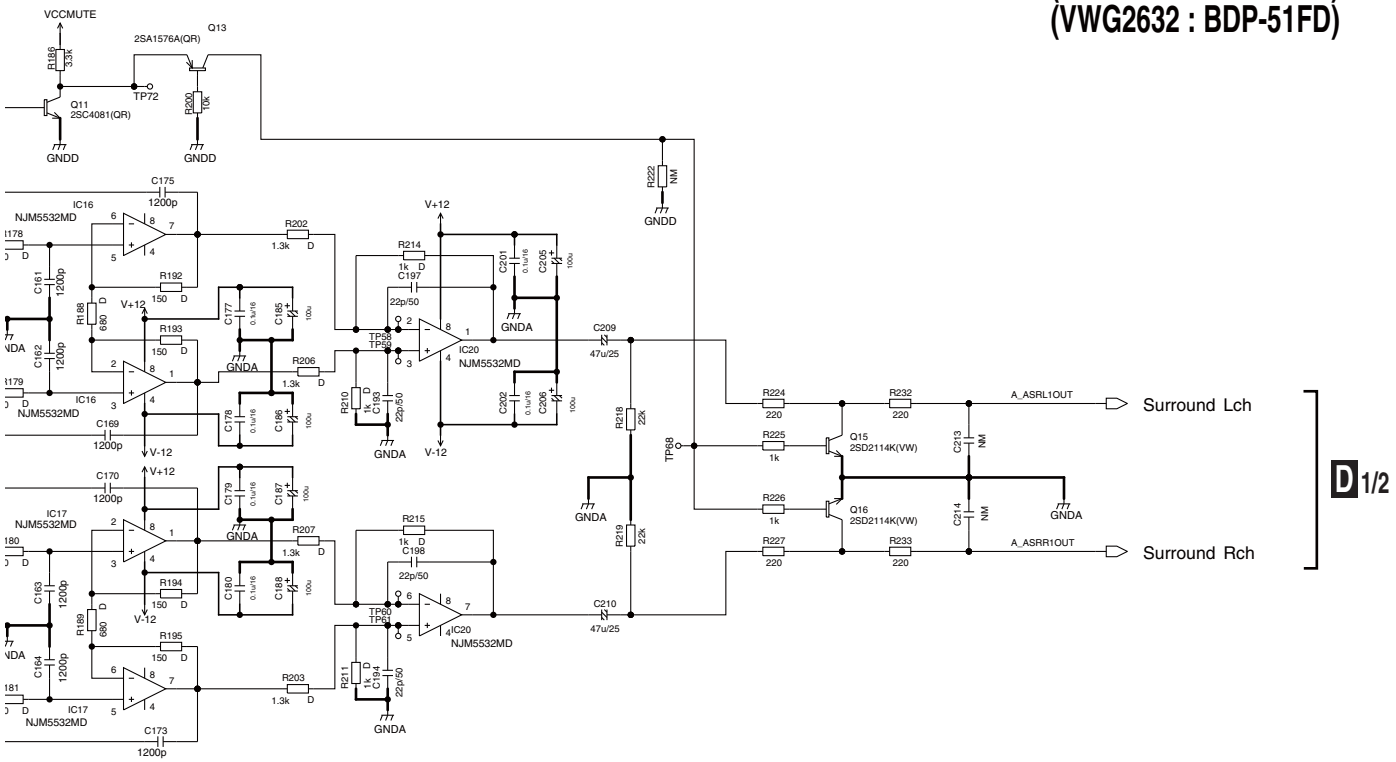
	VWG2615 : BDP-05FD	VWG2632 : BDP-51FD
JA1	VKB1160-A	VKB1159-A
JA2	VKB1160-A	VKB1159-A
JA3	VKB1129-A	VKB1130-A
JA4	VKB1138-A	VKB1265-A

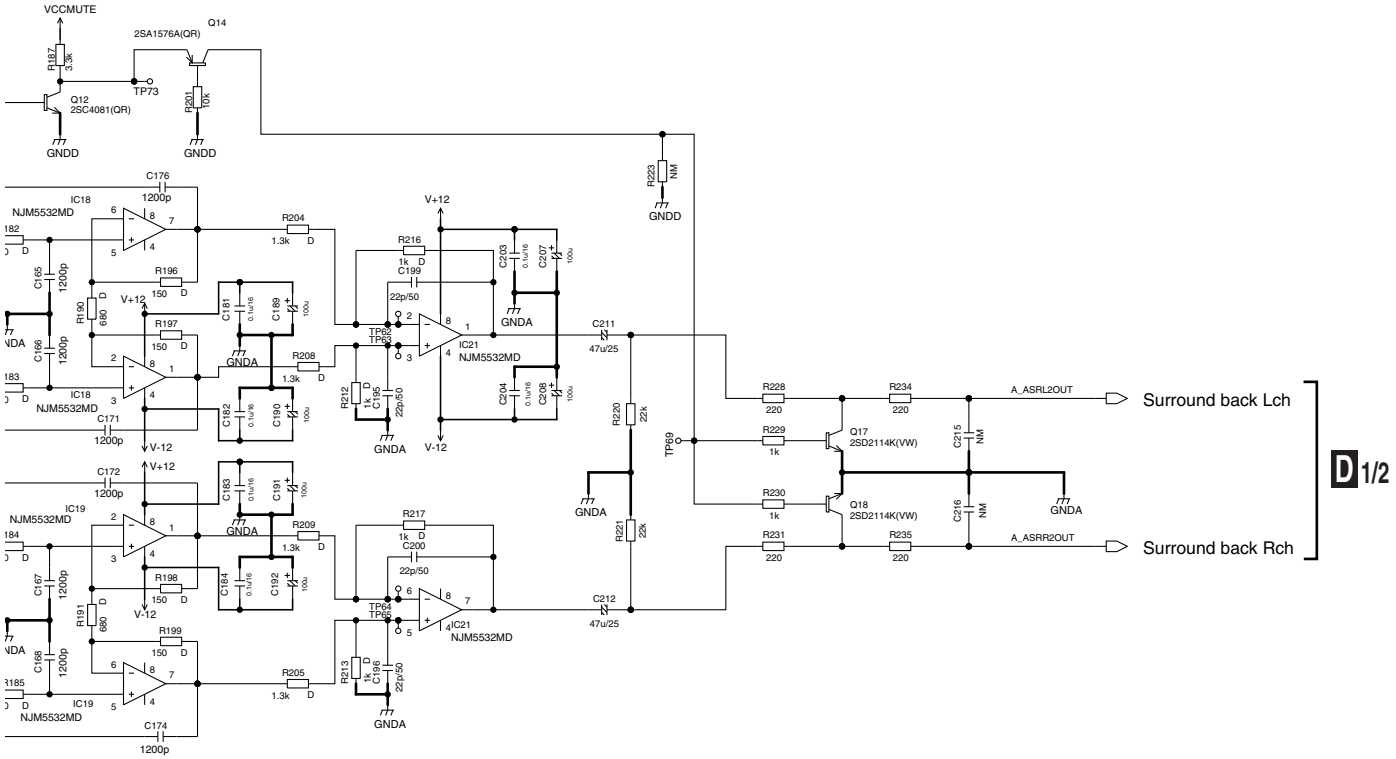


10.16 AUJB ASSY (2/2)



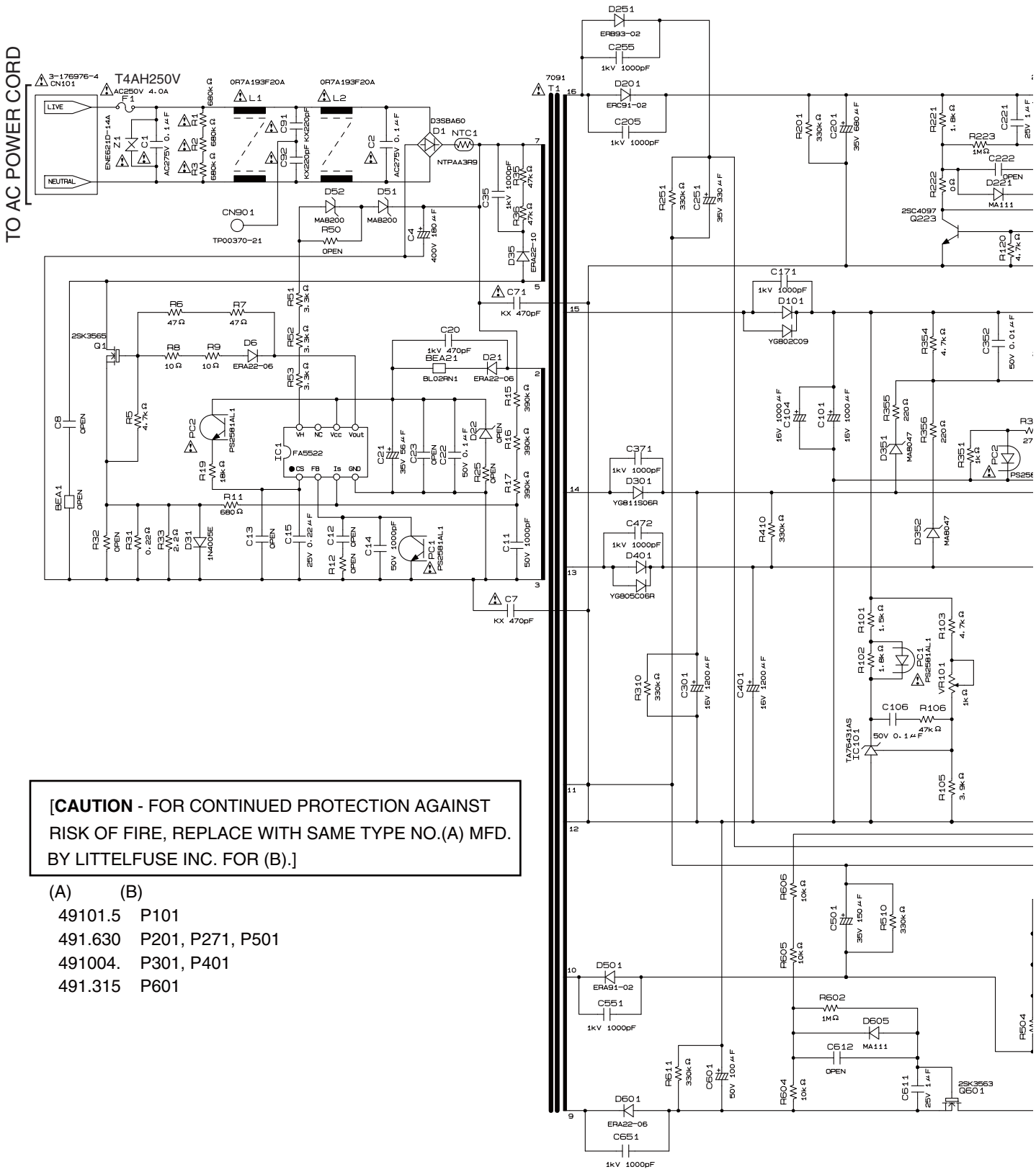
D 2/2 AUJB ASSY
(VWG2615 : BDP-05FD)
(VWG2632 : BDP-51FD)





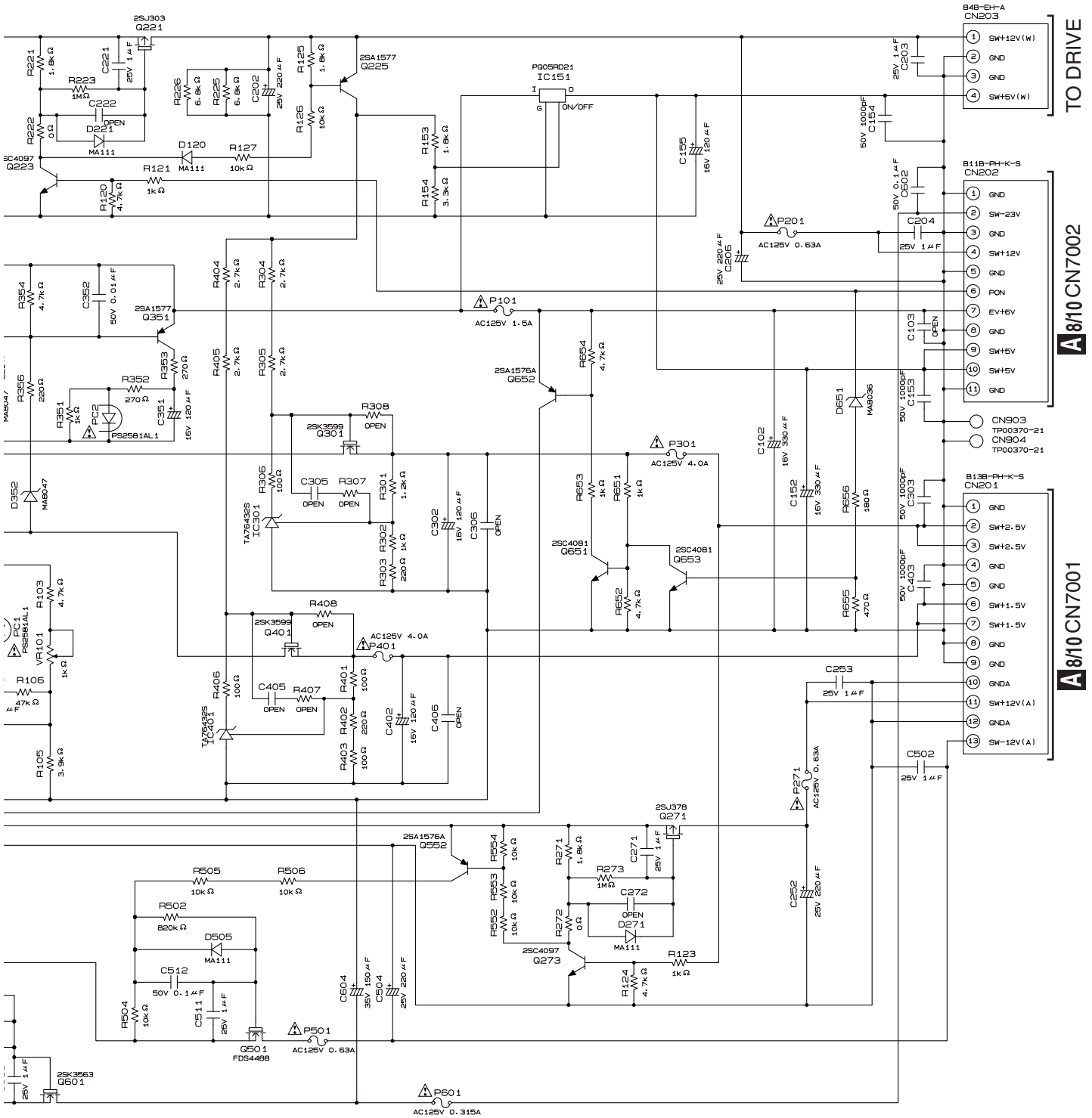
10.17 SYPS ASSY

G SYPS ASSY (VWR1415)



[**CAUTION** - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE WITH SAME TYPE NO.(A) MFD. BY LITTELFUSE INC. FOR (B).]

(A)	(B)
49101.5	P101
491.630	P201, P271, P501
491004.	P301, P401
491.315	P601

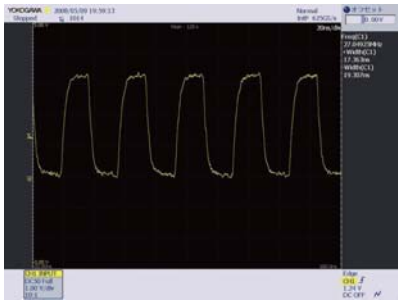

TO DRIVE
A 8/10 CN7002
A 8/10 CN7001
B4B-EH-A CN203
B11B-PH-K-S CN202
B13B-PH-K-S CN201
IC151 PQ05RD21
Q221 2SJ303
Q223 2SC4097
Q225 2SA1577
Q351 2SA1577
Q401 2SK3599
Q601 2SK3563
Q652 2SA1576A
Q651 2SC4081
Q653 2SC4081
Q552 2SA1576A
Q271 2SJ378
Q273 2SC4097
Q501 FDS4488
IC301 TA76432S
IC401 TA76432S
PC1 PS2581AL1
PC2 PS2581AL1
P101 AC125V 1.5A
P201 AC125V 0.63A
P301 AC125V 4.0A
P401 AC125V 4.0A
P501 AC125V 0.63A
P601 AC125V 0.315A
P271 AC125V 0.63A
CN903 TP00370-21
CN904 TP00370-21

10.18 WAVEFORMS

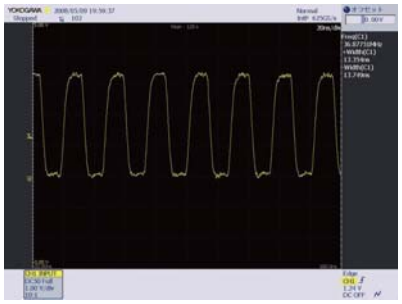
Note : The encircled numbers denote measuring point in the schematic diagram.

A MAIN ASSY

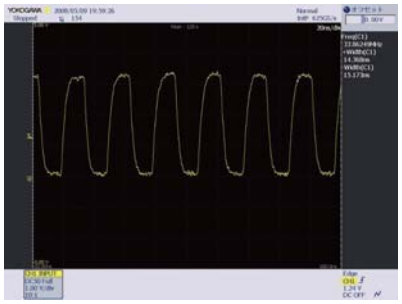
(1) 27 MHz VMCLK
R1141_IC1001
P-ON



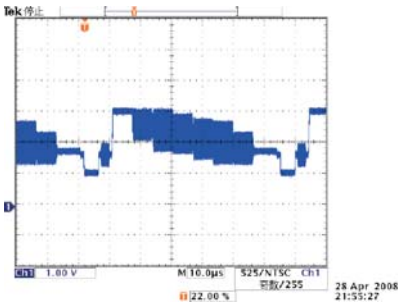
(2) 36.864 MHz AMCLK1
R1143_IC1001
P-ON



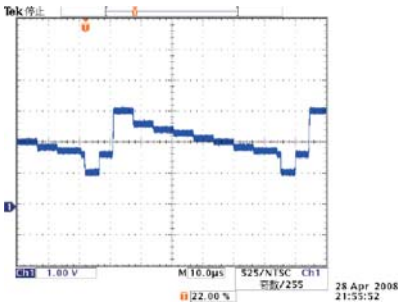
(3) 33.8688 MHz AMCLK2
R1142_IC1001
P-ON



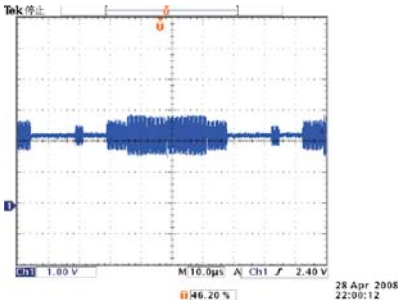
(4) Video Out
IC6001_27pin
75% Color-bar A1 Disc 2-20



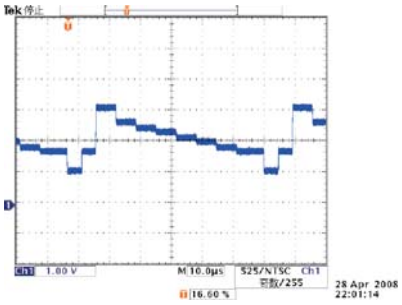
(5) Y Out
IC6001_25pin
75% Color-bar A1 Disc 2-20



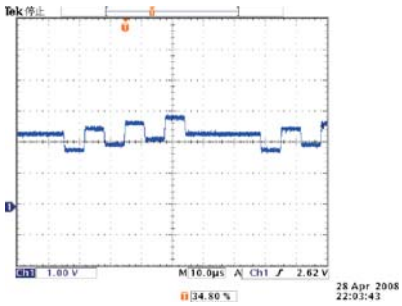
(6) C Out
IC6001_29pin
75% Color-bar A1 Disc 2-20



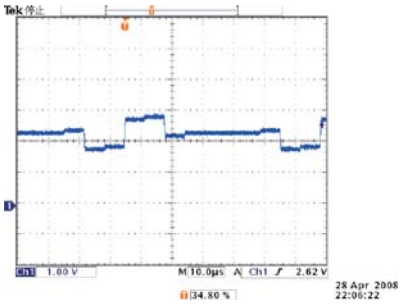
(7) Component Y Out
IC6001_23pin
75% Color-bar A1 Disc 2-20



(8) Cb Out
IC6001_21pin
75% Color-bar A1 Disc 2-20



(9) Cr Out
IC6001_18 pin
75% Color-bar A1 Disc 2-20

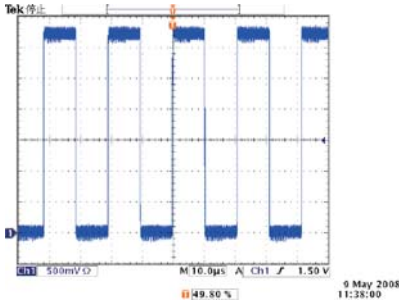


(10) CoAxicial Out
C8111_+ side
1kHz 2Vrms A1 Disc 2-1

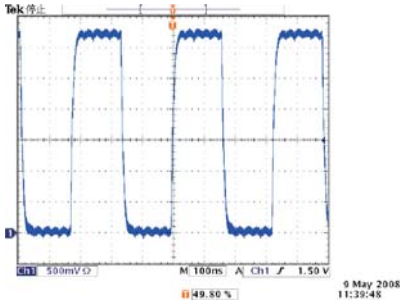
(11) Optical Out
R8206_JA8001 side
1kHz 2Vrms A1 Disc 2-1

D AUJB ASSY

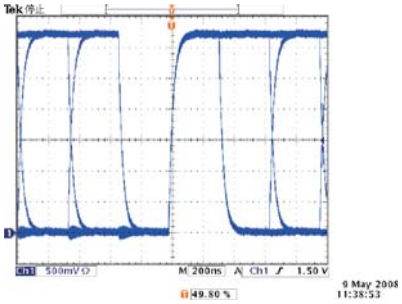
(12) LRCK
IC6_1pin
1kHz 2Vrms



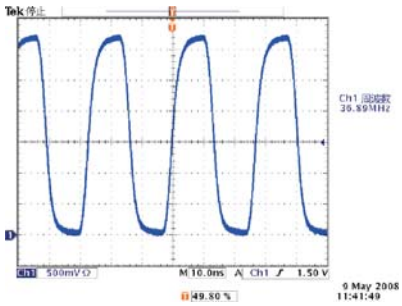
(13) BCK
IC6_3pin
1kHz 2Vrms



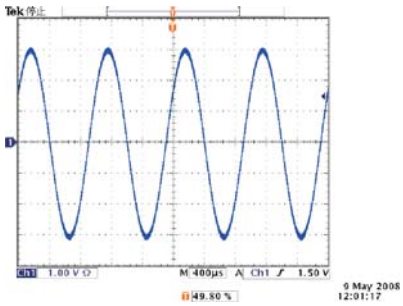
(14) ADATA0
IC6_2pin
1kHz 2Vrms



(15) MCLK
IC6_5pin
1kHz 2Vrms



(16) LOUT
IC12_1pin
1kHz 2Vrms



A

B

C

D

E

F

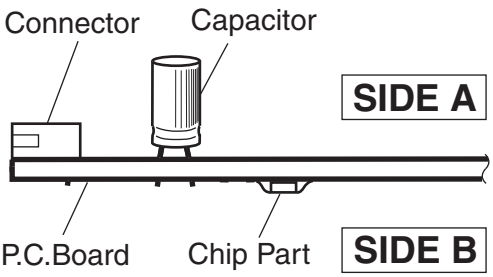
11. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

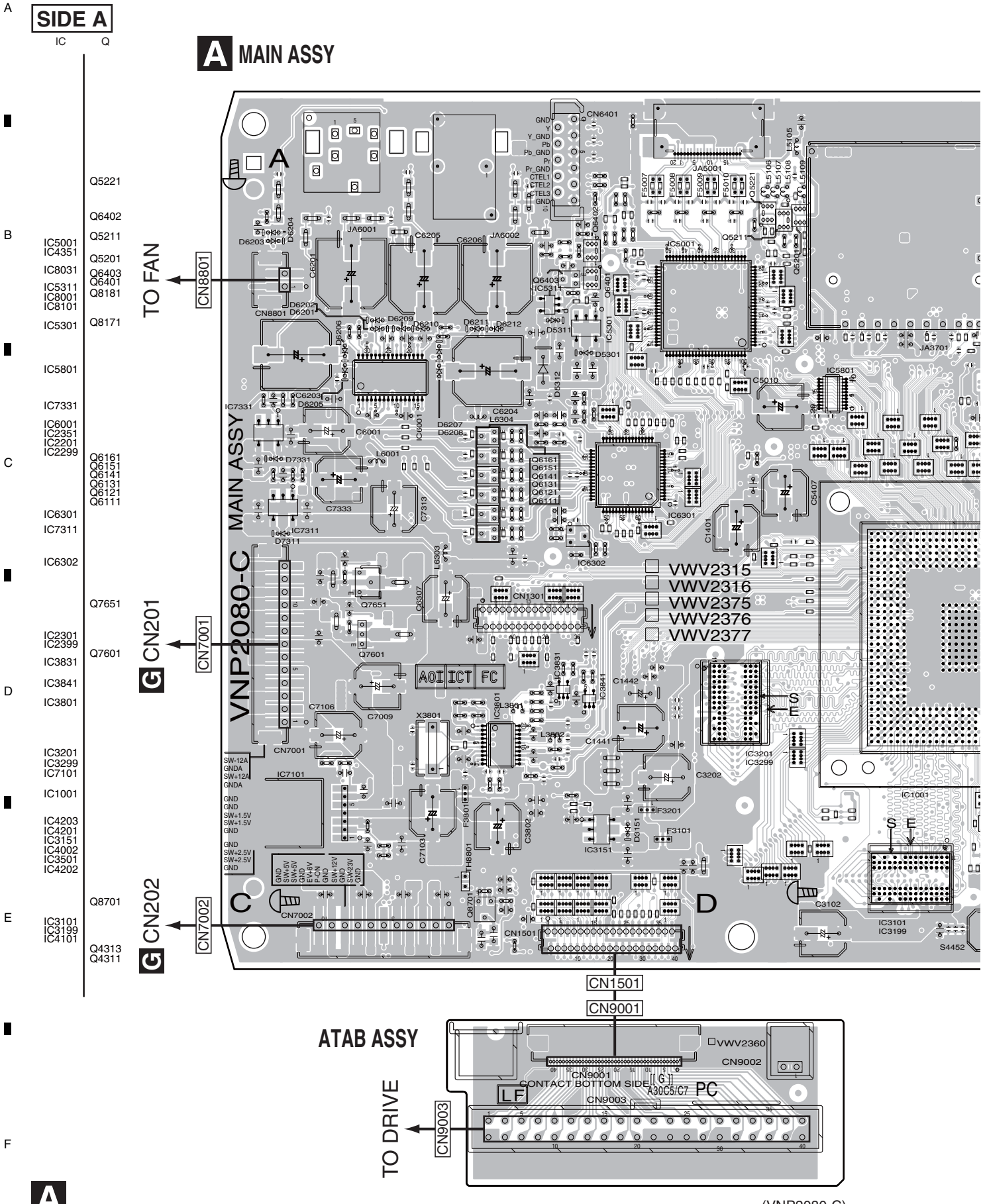
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.

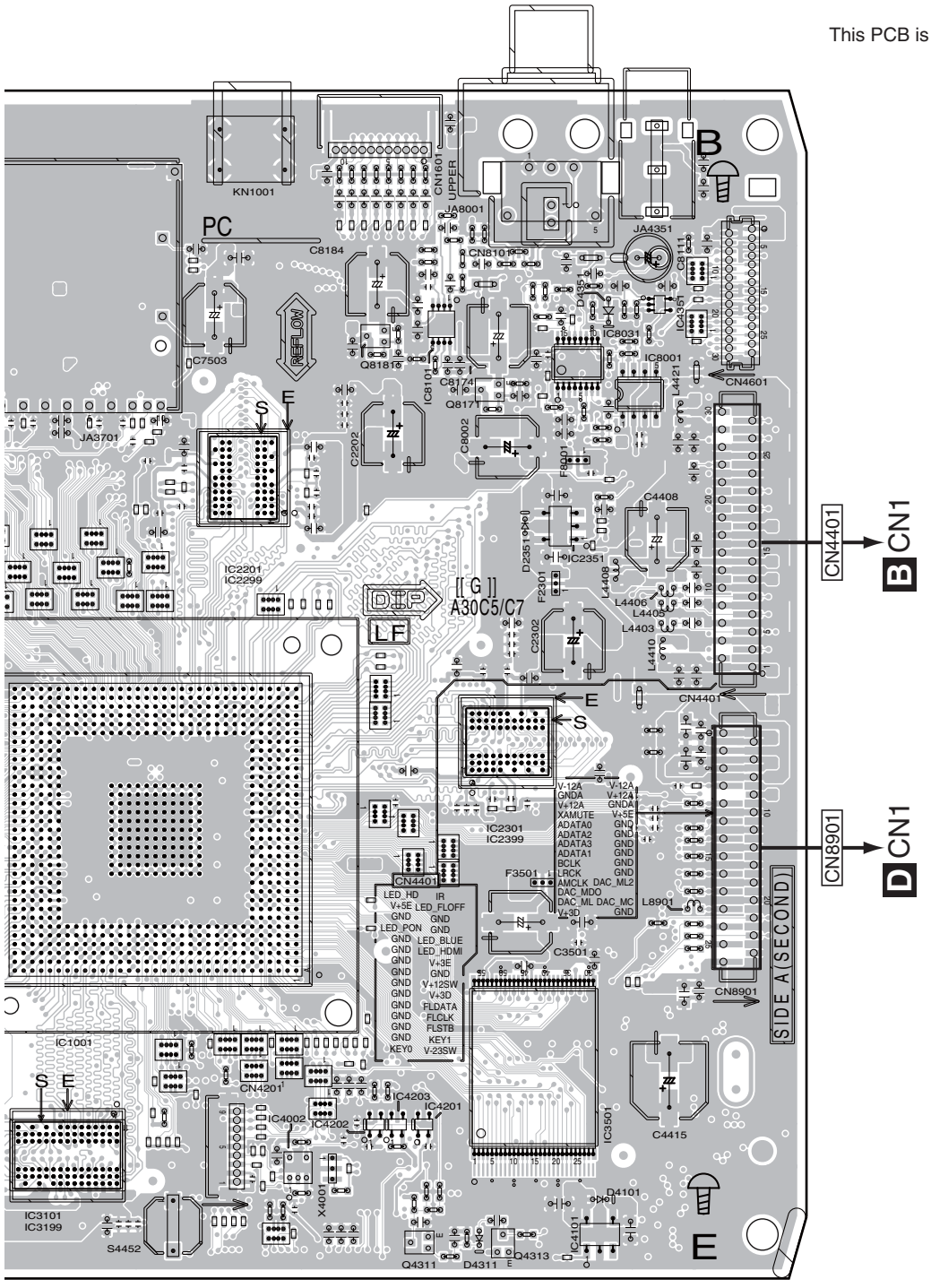


11.1 MAIN ASSY



SIDE A

This PCB is six layer structure.

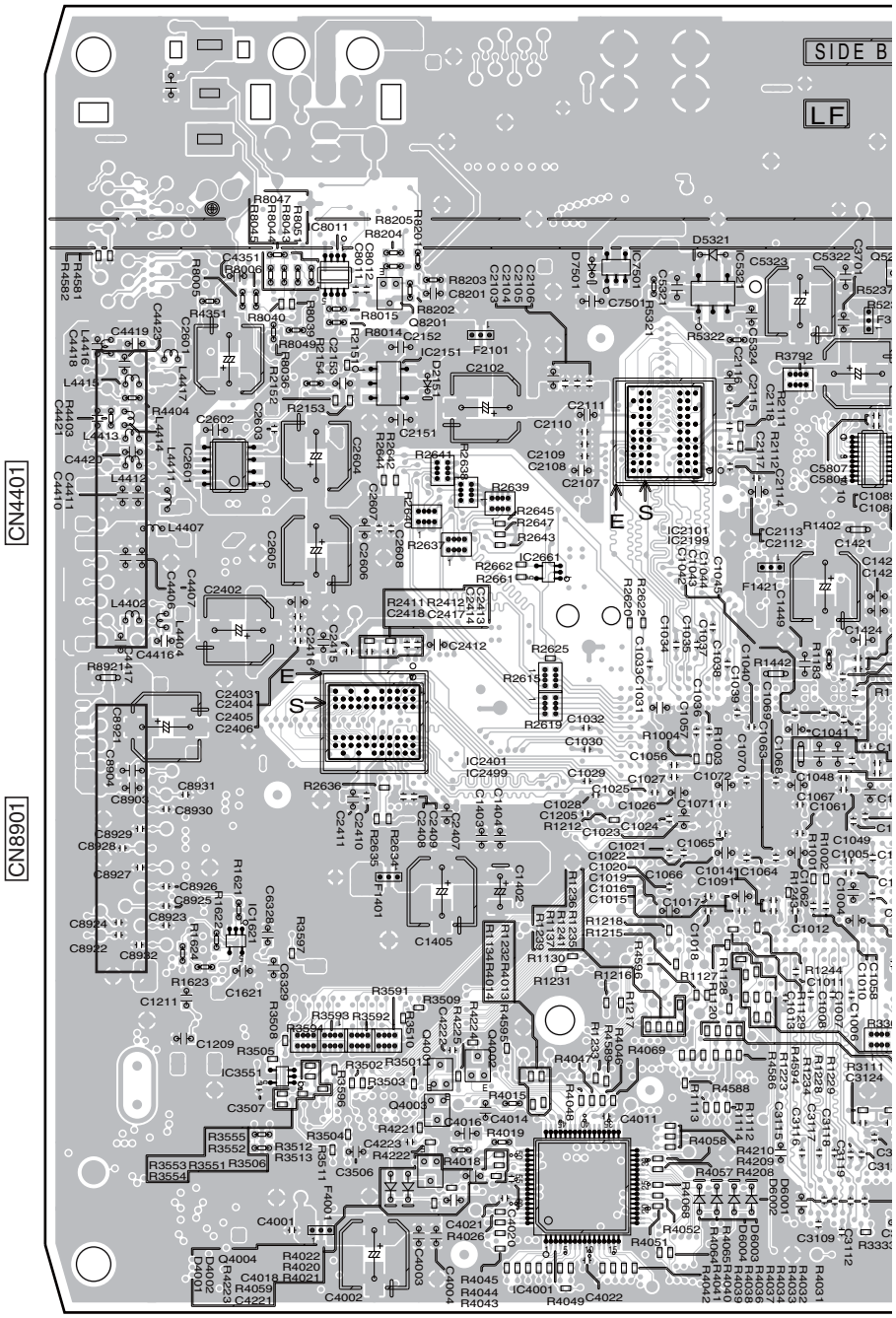


(VNP2080-C)

SIDE B

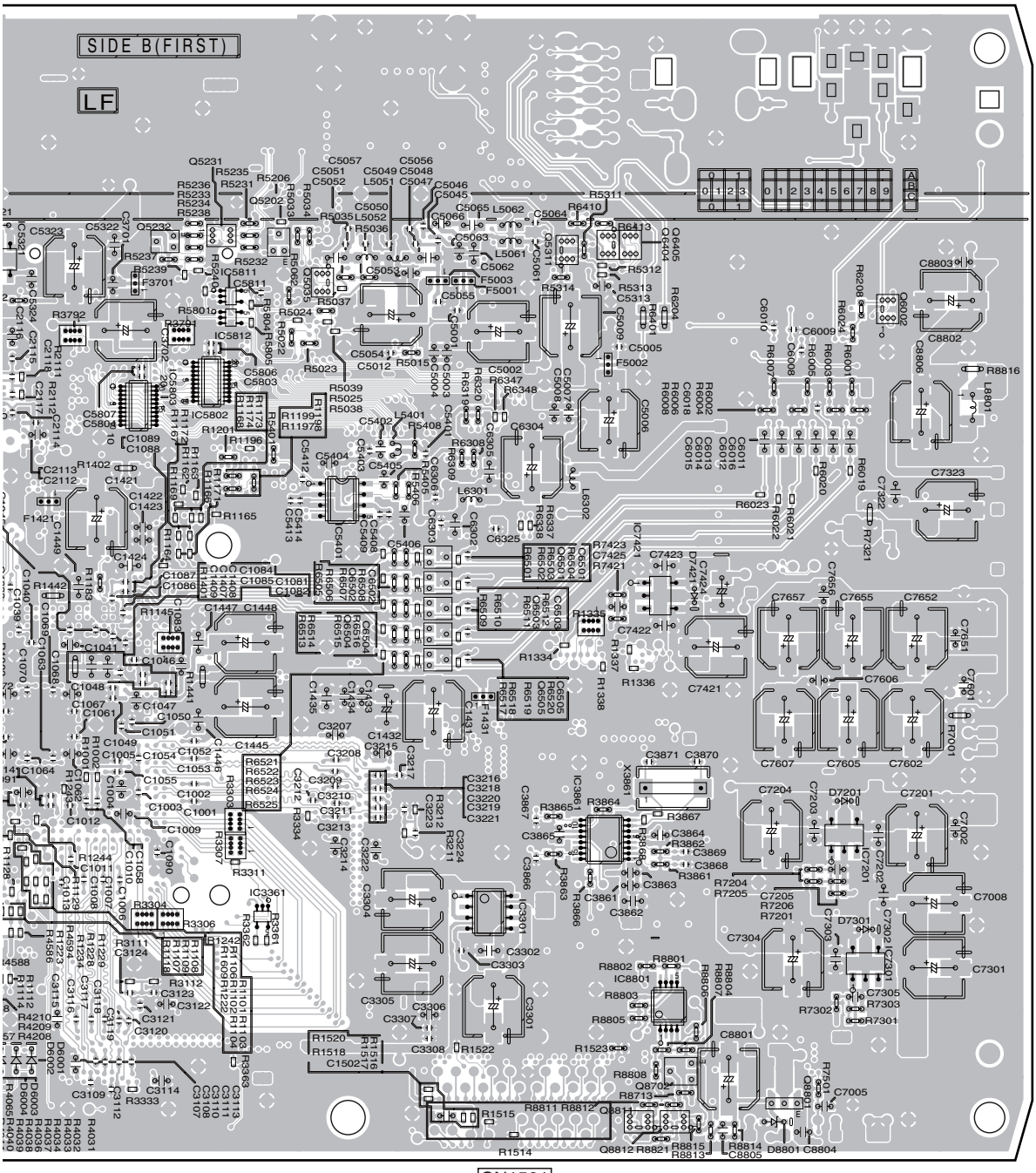
IC	Q
	Q5231
IC8011	Q5202
	Q5232
IC5321	Q6404
IC7501	Q6405
	Q5311
IC5811	
	Q8201
	Q5035
IC2151	Q6002
IC5812	
IC5803	
IC2601	
IC5802	
IC2101	
IC2199	
IC2661	
IC5401	
IC7421	
	Q6501
	Q6502
	Q6503
	Q6504
IC2401	
IC2499	
	Q6505
IC3861	
IC1621	
IC7201	
IC3361	
IC3301	Q4001
	Q4002
IC3551	
IC7301	
IC8801	Q4003
	Q8702
	Q8801
	Q8811
	Q4004
IC4001	Q8812

A MAIN ASSY



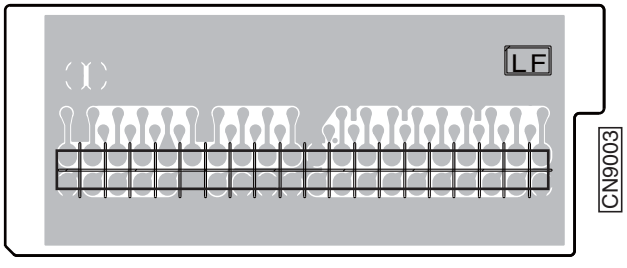
SIDE B

This PCB is six layer structure.



(VNP2080-C)

ATAB ASSY

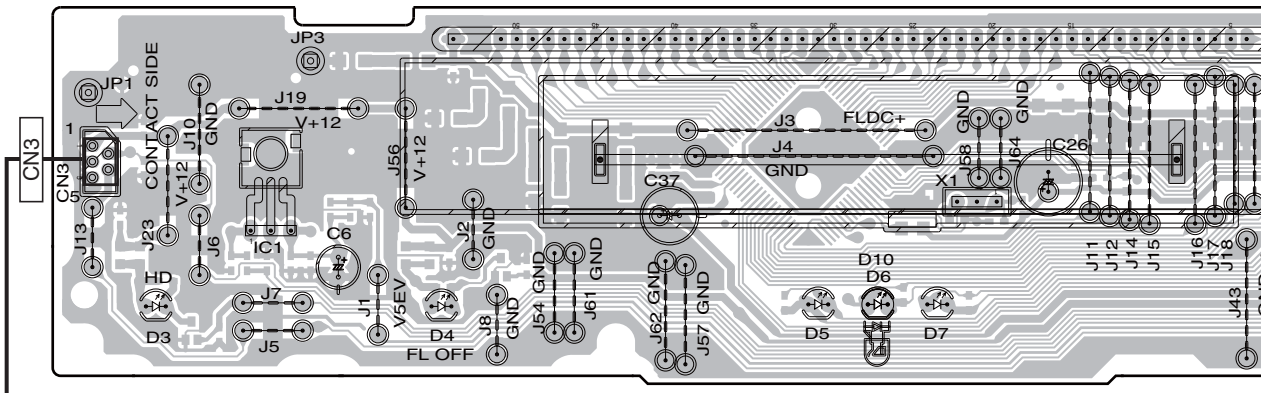


(VNP2080-C)

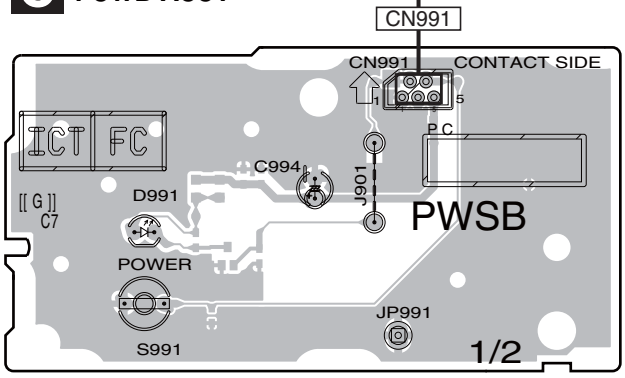
11.2 FLKY, CAPK and PSWB ASSYS

SIDE A

B FLKY ASSY



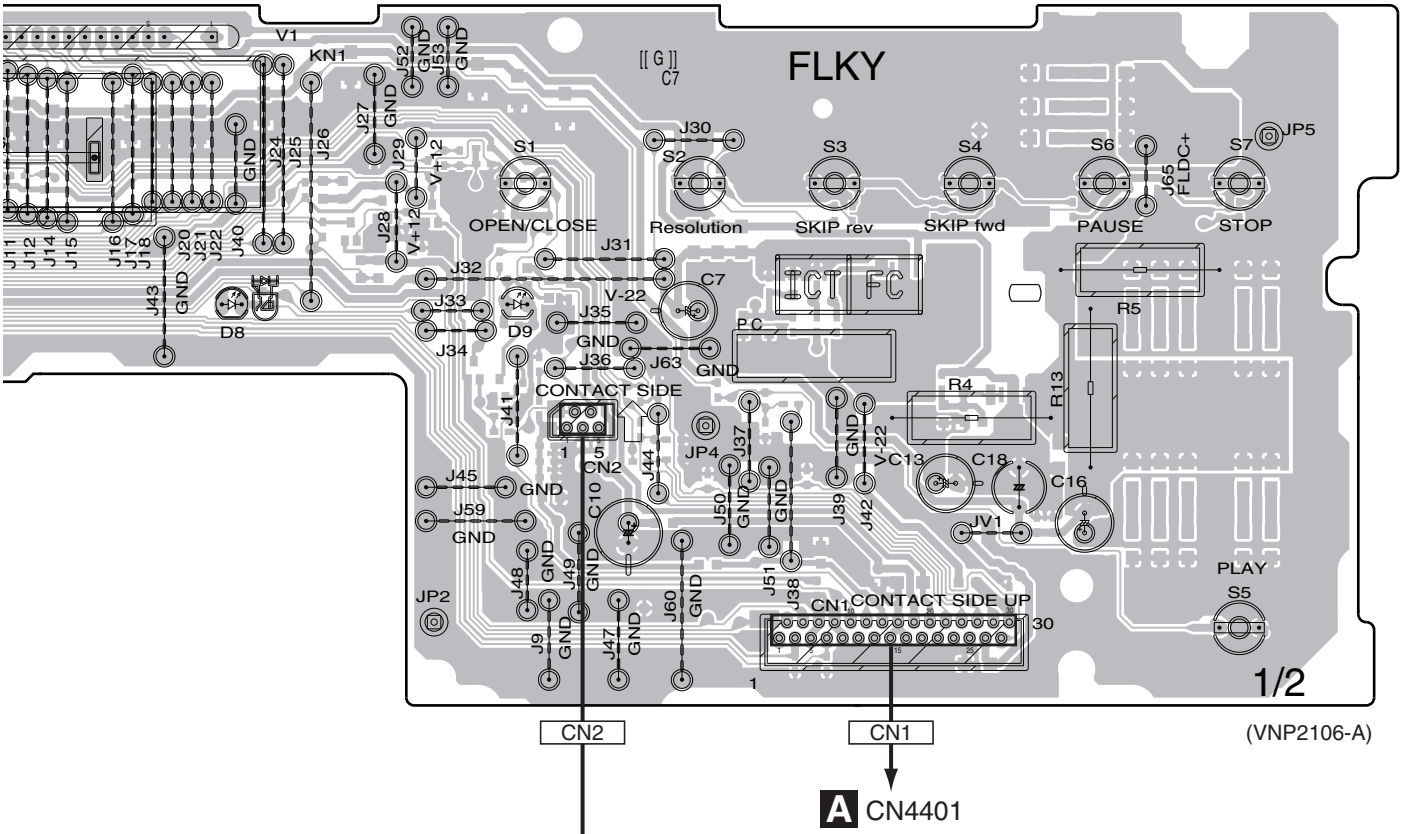
C PSWB ASSY



(VNP2106-A)

B C

SIDE A



CN2 CN1

A CN4401

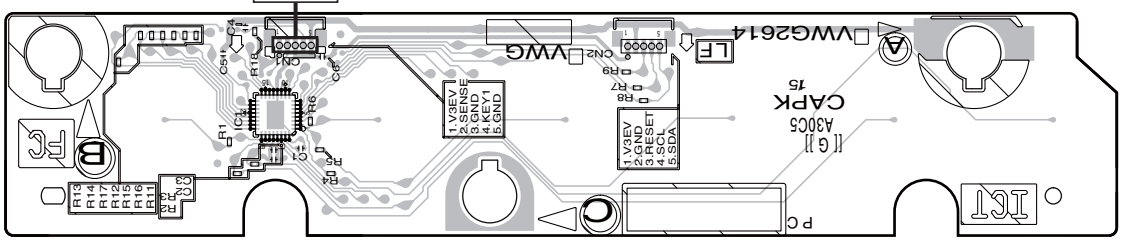
BDP-05FD Only

F **CAPK ASSY**

IC Q

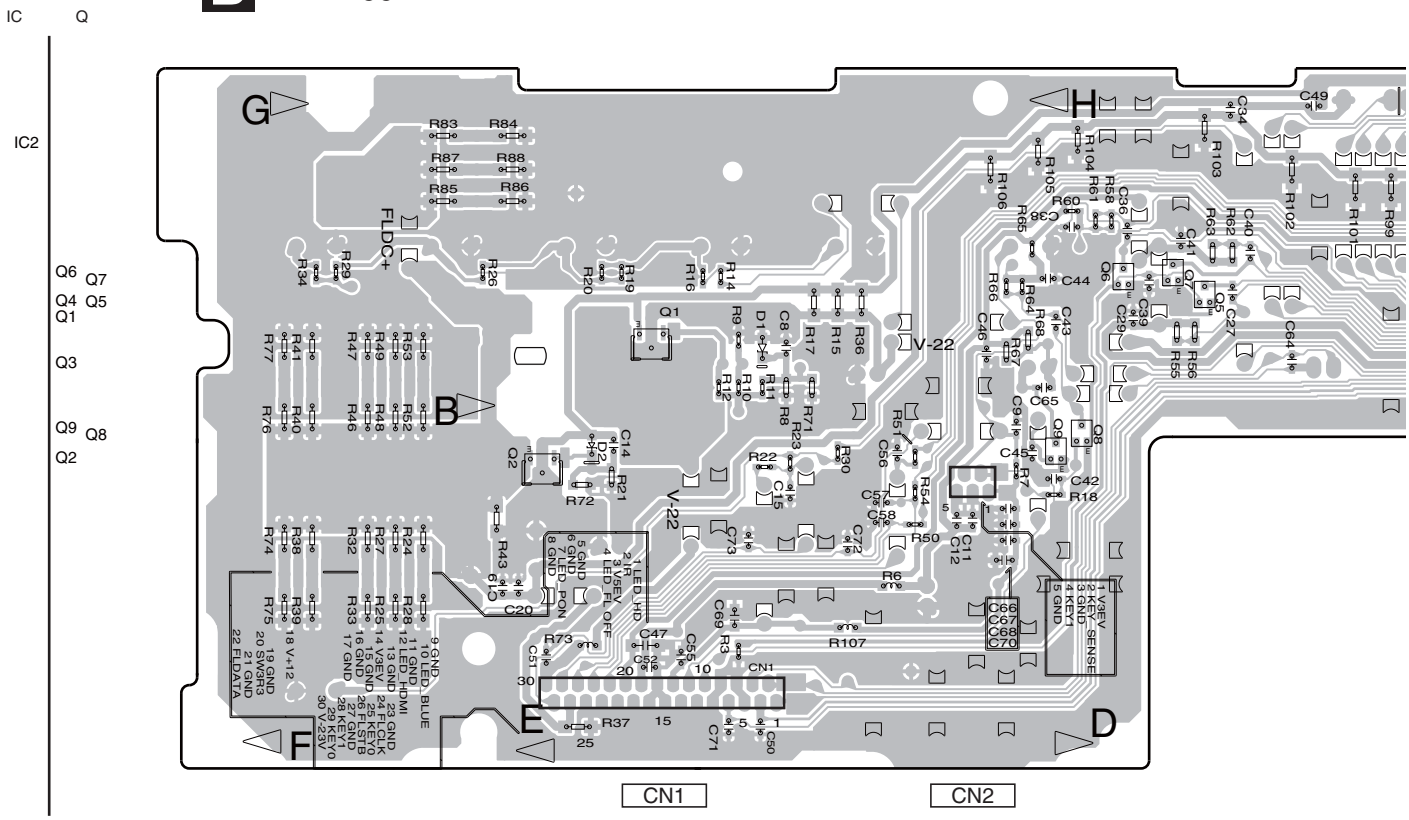
IC1

CN1



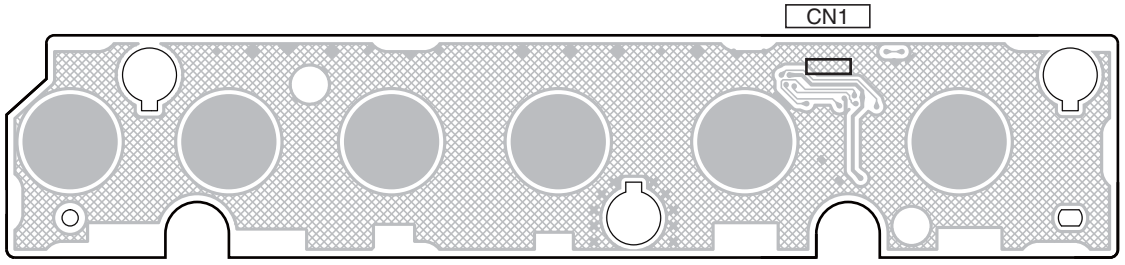
SIDE B

B FLKY ASSY



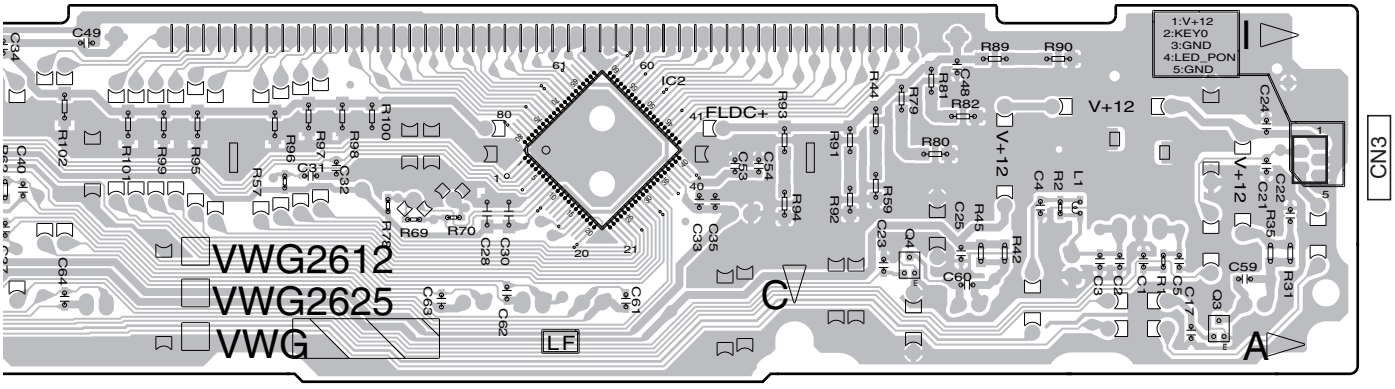
BDP-05FD Only

F CAPK ASSY



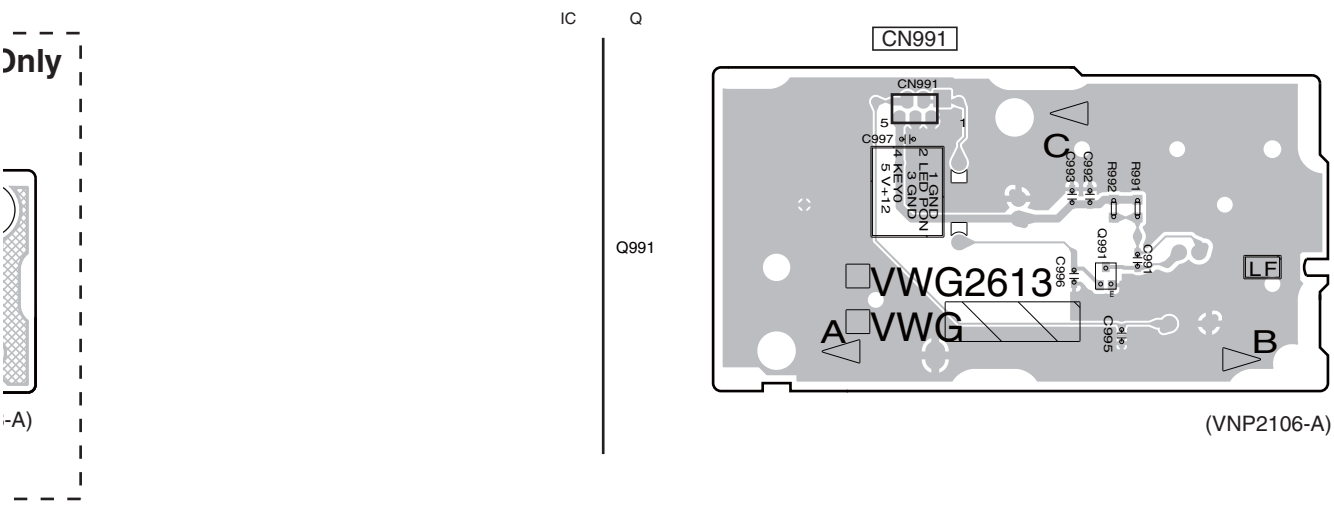
(VNP2108-A)

SIDE B



(VNP2106-A)

C PSWB ASSY



(VNP2106-A)

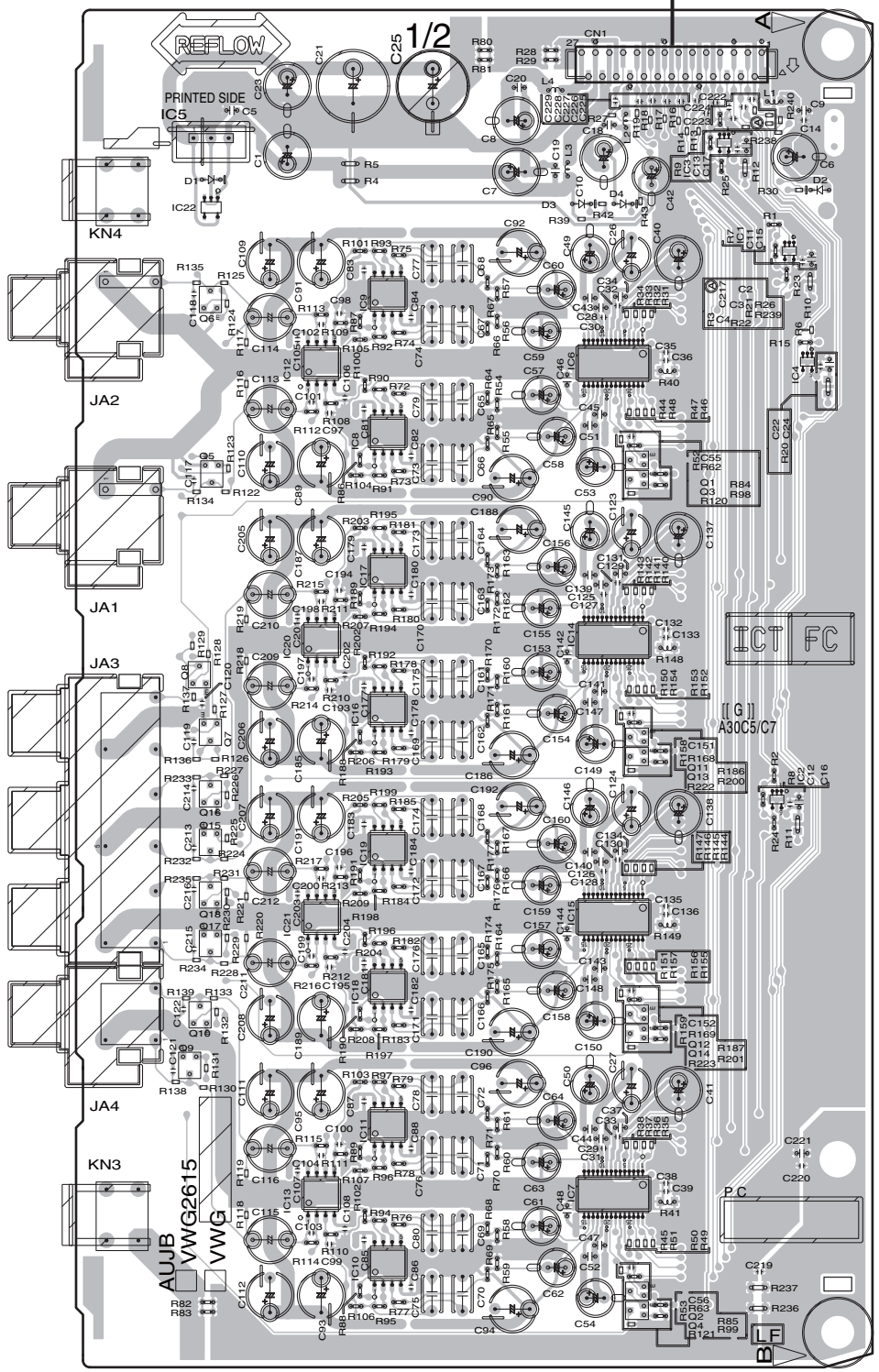
11.3 AUJB ASSY

SIDE A

SIDE A

D AUJB ASSY

A CN8901



(VNP2107-A)

IC Q

IC5 IC3 IC22 IC1 IC9 Q6 IC12 IC6 IC4 IC8 Q5 Q1 Q3 IC17 IC14 IC20 Q8 IC16 Q7 IC2 Q11 Q13 Q16 Q15 IC19 IC15 IC21 Q18 Q17 IC18 Q12 Q14 Q10 Q9 IC11 IC7 IC13 IC10 Q2 Q4

SIDE B

SIDE B

A

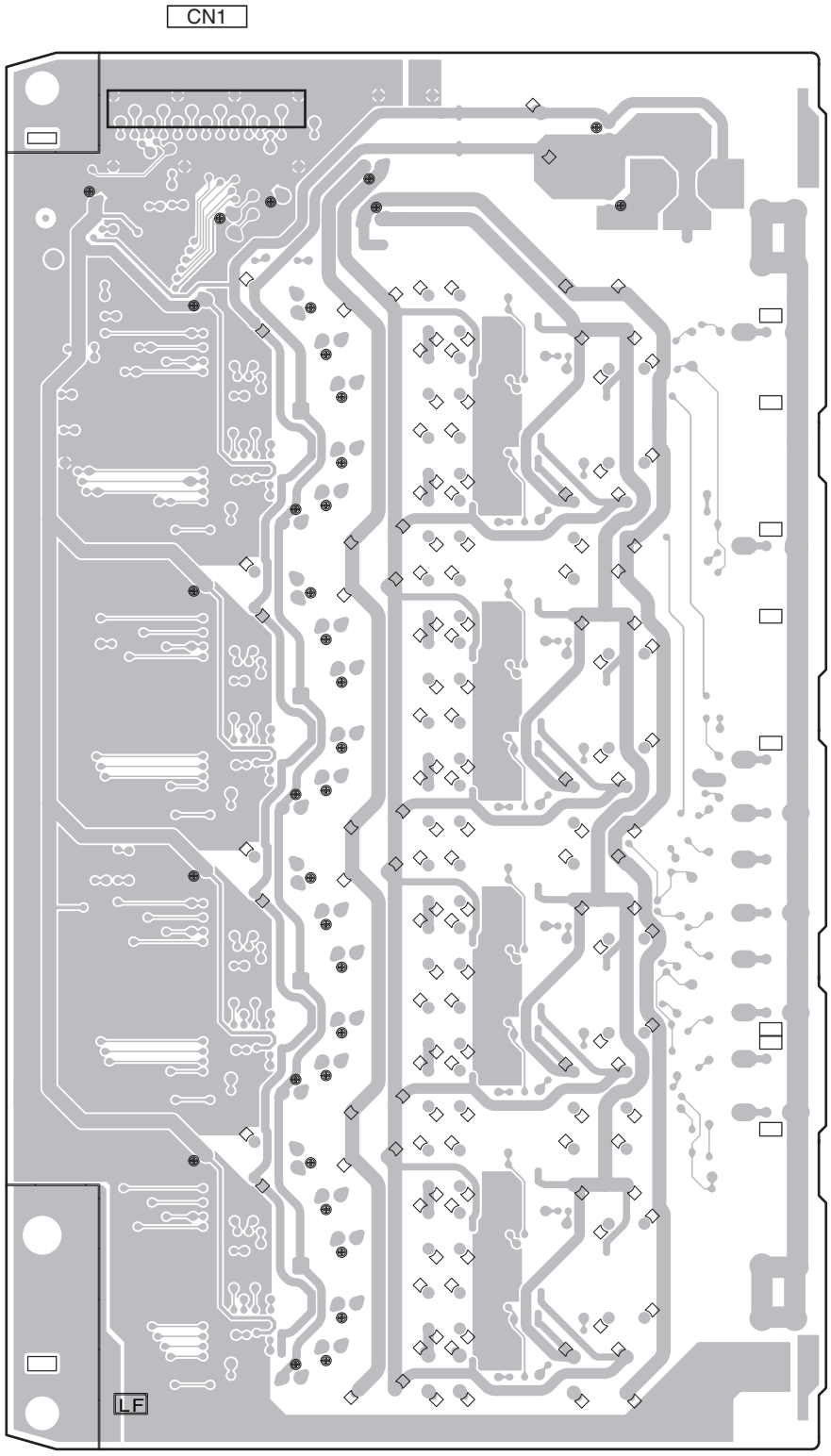
B

C

D

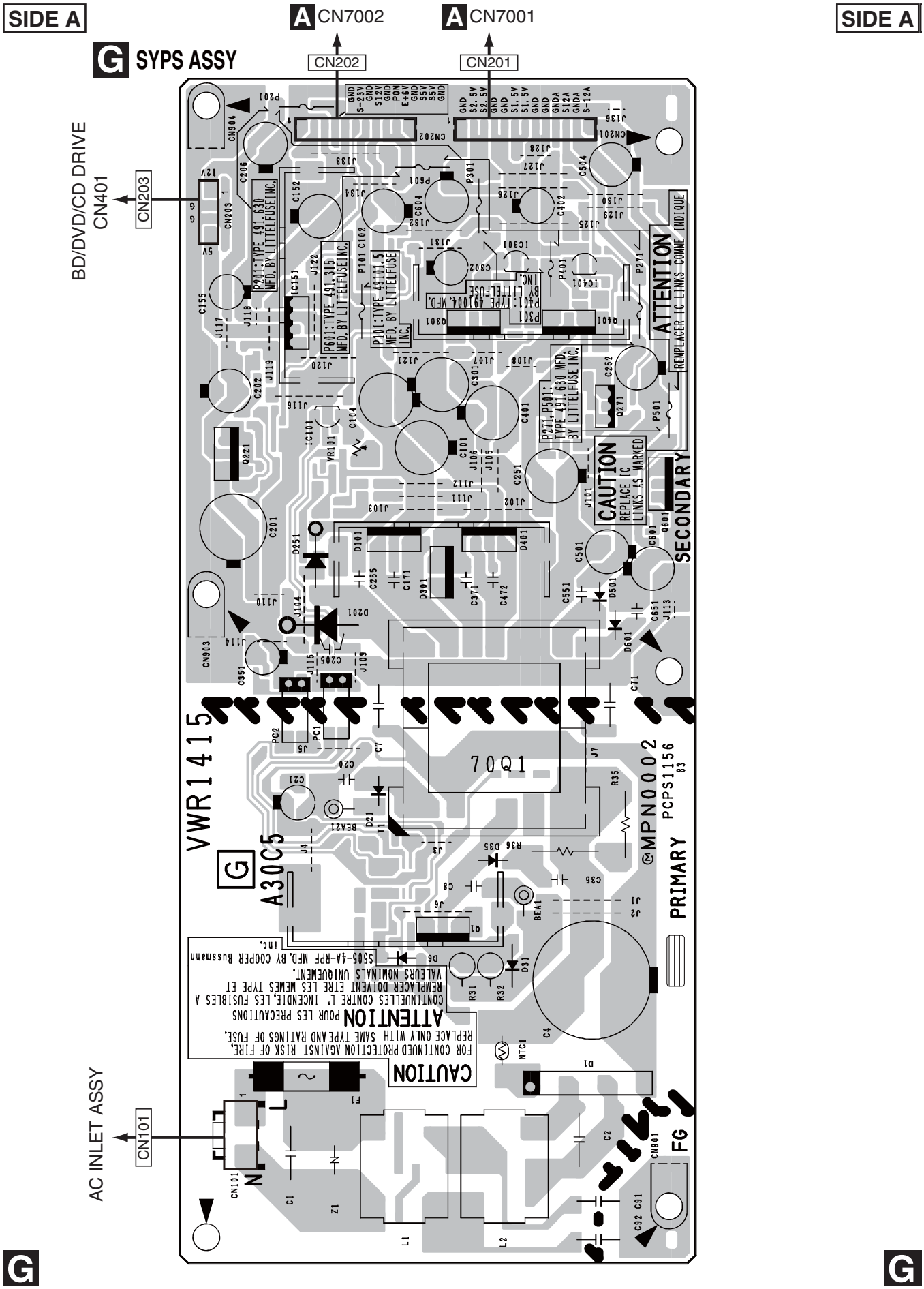
E

F



(VNP2107-A)

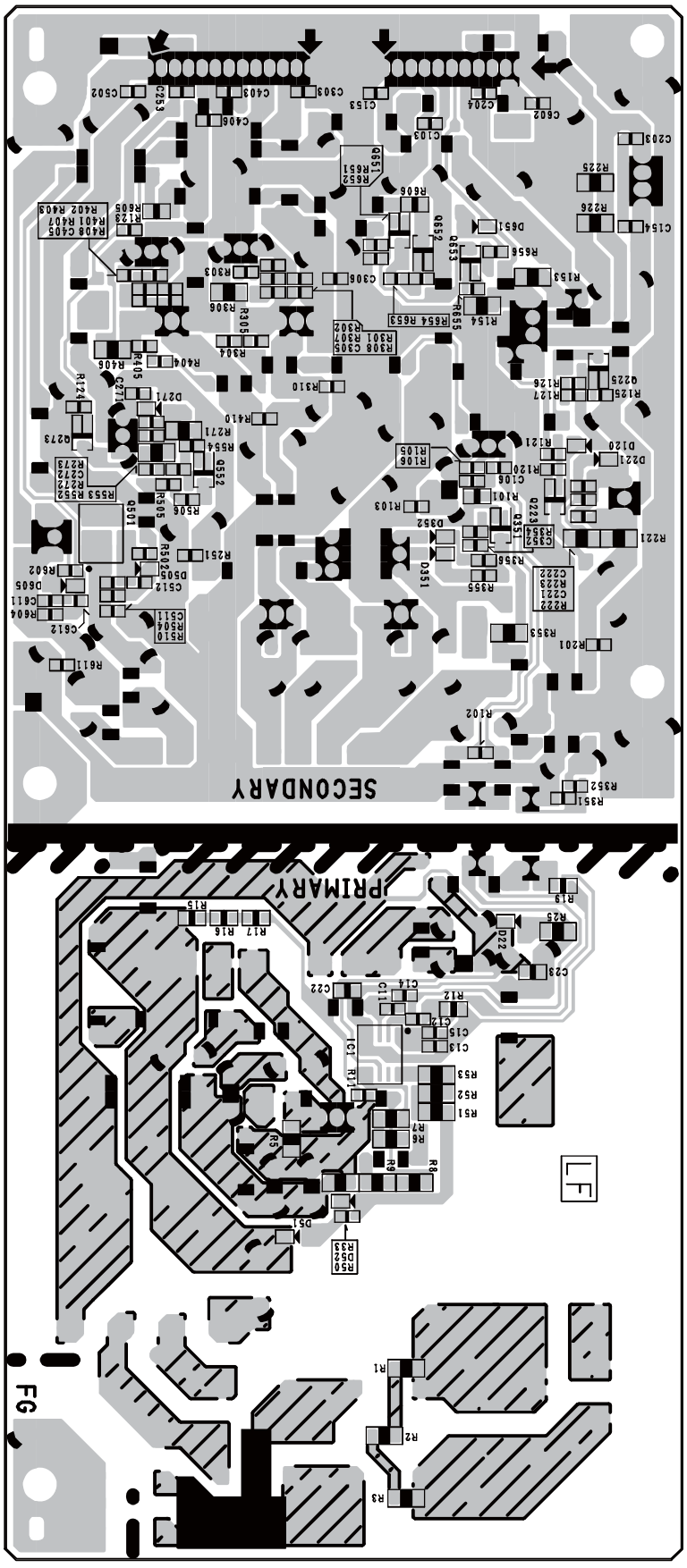
11.4 SYPS ASSY



SIDE B

SIDE B

G SYPS ASSY



12. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47 k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω	→	*56 × 10¹*	→	*561* ····· *RD1/4PU [5][6][1] J*
47 kΩ	→	*47 × 10³*	→	*473* ····· *RD1/4PU [4][7][3] J*
0.5 Ω	→	*R50*		····· *RN2H [R][5][0] K*
1 Ω	→	*1R0*		····· *RS1P [1][R][0] K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62 kΩ	→	*562 × 10¹*	→	*5621* ····· *RN1/4PC [5][6][2][1] F*

- *Meaning of the figures and others in the parentheses in the parts list.*

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.
IC 301 (A, 91, 111) IC NJM2068V

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
	1	..SERVICE MAIN ASSY (BDP-05FD)	VXX3326
	1	..SERVICE MAIN ASSY (BDP-51FD)	VXX3328
NSP	2	..MAIN ASSY (BDP2.0)(BDP-05FD)	VWV2315
NSP	2	..MAIN ASSY (BDP2.0)(BDP-51FD)	VWV2375
	2	..ATAB ASSY (BDP2.0)	VWV2360
NSP	1	..FLKB ASSY (BDP-05FD)	VWM2463
NSP	1	..FLKB ASSY (BDP-51FD)	VWM2481
	2	..FLKY ASSY (BDP-05FD)	VWG2612
	2	..FLKY ASSY (BDP-51FD)	VWG2625
	2	..PSWB ASSY	VWG2613
NSP	1	..AUJB ASSY (BDP-05FD)	VWG2615
NSP	1	..AUJB ASSY (BDP-51FD)	VWG2632
	1	..CAPK ASSY (BDP-05FD only)	VWG2614
⚠	1	..SYPS ASSY	VWR1415
	1	..DRIVE ASSY BDY-103	VXX3325

A MAIN ASSY (BDP2.0) (BDP-05FD)

SEMICONDUCTORS

Mark	No.		Part No.
	IC	1001	R8A34019BG
	IC	2101,2201,2301,2401	EDE5108AJBG-6E-E
⚠	IC	2151,2351,3151,5301	S-1170B18UC-OTD
⚠	IC	2601,3301	LP2996M
	IC	3101,3201	EDE5116AJBG-6E-E
	IC	3501	VYW2414
	IC	3551,4351	TC7SH08FUS1
	IC	3801	PDJ015A
	IC	4001	PDC178A8
	IC	4002	BD45282G
⚠	IC	4101,7301,7311	S-1170B33UC-OTS
	IC	4201	BU4809F
	IC	5001	SII9134CTU
⚠	IC	5311	S-L2980A33MC-C6S
⚠	IC	5321	NJM2370U1-05
	IC	5401,8001	ICS571MLF
	IC	6001	NJM2566AV
	IC	6301	ADV7340BSTZ
⚠	IC	7101	TPS74901KTW
⚠	IC	7201,7331	S-1170B18UC-OTD
⚠	IC	7421	S-1170B50UC-OUJ
⚠	IC	7501	S-L2980A50MC-C7J
	IC	8011	TC7WH74FU
	IC	8031	TC74VHC157FTS1
	IC	8101	LMH6658MMX
	Q	4001,4004,5232,6111	2SA1576A
	Q	4002,4003,5202	DTC124EUA
	Q	5201	UMB1N
	Q	5211,5221	UM6K1N
	Q	5231	HN1C03FU
	Q	6121,6131,6141,6151	2SA1576A
	Q	6161,8181	2SA1576A
	Q	8171	2SC4081
⚠	Q	8801	2SC5712
	Q	8812	UMD2N
	D	4001,4002	1SS355
	D	4351,6001-6004	RB501V-40
	D	8801	UDZS7R5(B)

MISCELLANEOUS

	L	3801,3802,8901 INDUCTOR	CTF1384
	L	4402-4406,4412-4417 INDUCTOR	CTF1306
	L	4407,4408,4410,4411 INDUCTOR	CTF1394
	L	4421,5051,5052,5061 INDUCTOR	CTF1394
	L	5062,5105,6001 INDUCTOR	CTF1394
	L	5106-5109 INDUCTOR	CTF1306
	L	5401 INDUCTOR	CTF1357
	L	6301-6304 INDUCTOR	CTF1394
	F	1401,1431,2101,2301 EMI FILTER	DTL1106
	F	3101,3201,3501,3701 EMI FILTER	DTL1106
	F	3801 EMI FILTER	DTL1106
	F	4001,5001-5003,8001 EMI FILTER	VTL1171
	F	5007-5010 EMI FILTER	ATF1209
	JA	3701 SDCARD SLOTCONNECTOR	DKP3748
	JA	4351 JACK	RKN1004
	JA	5001 HDMI CONNECTOR	AKP7220
	JA	6001 COMB.JACK(S+1P)	AKB7159
	JA	6002 3P PIN JACK	VKB1198
	JA	8001 JACK BOARD	VKX1023
	X	3801 CRYSTAL RESONATOR	VSS1226

Mark	No.	Description	Part No.
X	4001	CERAMIC RESONATOR (12 MHz)	VSS1216
CN	1501	CONNECTOR	VKN2050
CN	1601	11P CONNECTOR	RKN1052
CN	4401	30P CONNECTOR	VKN1620
CN	7001	CONNECTOR	AKM1284
CN	7002	CONNECTOR	AKM1282
CN	8801	CONNECTOR	AKM1273
CN	8901	27P CONNECTOR	VKN1617
	0	SD MEMORY CARD	VWX1233

RESISTORS

R	1001-1004,2111,2112	RS1/16SS82R0F
R	1105,1117,1119	RAB4CQ220J
R	1111,1115,1623,3803	RS1/16S220J
R	1122-1124,1176,1177	RAB4CQ220J
R	1145,1146,1552-1555	RAB4CQ223J
R	1166,1167	RS1/16SS1500F
R	1171	RS1/16SS8200F
R	1172	RS1/16SS1000F
R	1182,1184-1194,1211	RAB4CQ470J
R	1183	RS1/16S100J
R	1195,3814,7501,8001	RS1/16S470J
R	1201,1251,2154,2354	RS1/16S0R0J
R	1213,5026	RAB4CQ470J
R	1214,1238,1252,1253	RAB4CQ103J
R	1302,1327,1328	RAB4CQ330J
R	1332,1335	RAB4CQ472J
R	1401,1402,1441-1445	RS1/10S0R0J
R	1502-1505,1513	RAB4CQ330J
R	1591,6211,6214,7321	RS1/10S0R0J
R	1601,1602,1605,1606	RS1/16S221J
R	1610,1611,1622,1651	RS1/16S221J
R	1652,4351,4353,6326	RS1/16S221J
R	2211,2212,2311,2312	RS1/16SS82R0F
R	2411,2412,3111,3112	RS1/16SS82R0F
R	2615-2619,3303-3308	RAB4CQ220J
R	2637-2641,3341-3346	RAB4CQ750J
R	3154,3513,3833,3843	RS1/16S0R0J
R	3211,3212	RS1/16SS82R0F
R	3591-3594,3791,3792	RAB4CQ103J
R	3804,3817,3819,5022	RS1/16S220J
R	3805,3806,4015,4016	RS1/16S103J
R	3815,8002	RS1/16S330J
R	4017,4019,5234,5235	RS1/16S472J
R	4024,8813	RS1/16S471J
R	4061,4317,4602,5015	RS1/16S0R0J
R	4063	RAB4CQ223J
R	4071,7332	RS1/16S223J
R	4072,4316	RS1/16S104J
R	4241,4355,6308,7102	RS1/16S103J
R	4352,7301,7311,7421	RS1/16S101J
R	4354	RS1/16S224J
R	4583,4585,4591,4593	RAB4CQ103J
R	5019,5030,5031,5043	RAB4CQ103J
R	5023,5039,5049-5052	RS1/16S220J
R	5033,5034,5057,5211	RS1/16S0R0J
R	5035	RS1/16S180J
R	5036	RS1/16S6800F
R	5041,5044,5045,6301	RAB4CQ220J
R	5231	RS1/16S473J
R	5232,8015	RS1/16S102J
R	5233,5237	RS1/16S272J
R	5236	RS1/16S562J
R	5238	RS1/16S472J
R	5321,5401,5402,6004	RS1/16S0R0J
R	5405	RS1/16S22R0F
R	5406	RS1/16S62R0D
R	6001,6007,7101,8181	RS1/16S332J
R	6002,6008,7205	RS1/16S682J
R	6006,6010-6012,6321	RS1/16S0R0J
R	6111,6121,6131	RS1/16S75R0F
R	6141,6151,6161	RS1/16S3000F
R	6201,6204	RS1/10S75R0F
R	6202,6203,6205,6206	RS1/10S68R0F
R	6212,6213	RS1/10S4R7J
R	6215,6216	RS1/10S5R6J
R	6302,6317	RAB4CQ220J
R	6319,6320	RS1/16S392J
R	6322,6324	RS1/16S151J
R	6323,6325,6328	RS1/16S200J
R	6327	RS1/16S3901F
R	6329	RS1/16S1001F
R	6336,7204,8051,8107	RS1/16S0R0J
R	6345	RAB4CQ0R0J
R	7103	RS1/16S1201D
R	7104	RS1/16S2701D
R	7105	RS1/16S3300D
R	7206,8111	RS1/16S103J
R	7333	RS1/16S333J
R	7601,7603,7651,7653	RS1/10S0R0J
R	8004-8006,8031,8035	RS1/16S220J
R	8036,8048	RS1/16S220J
R	8101	RN1/16SE2201D
R	8102	RS1/16S101J
R	8103	RN1/16SE6800D
R	8104	RS1/16S331J
R	8105	RS1/16S152J
R	8106	RN1/10SC75R0D
R	8108,8121,8131,8132	RS1/16S0R0J
R	8112,8816,8921	RS1/10S0R0J
R	8171,8182	RS1/16S122J
R	8172	RS1/16S222J
R	8206,8901-8903,8924	RS1/16S470J
R	8811,8821,8905-8910	RS1/16S0R0J
R	8815	RS1/16S561J
	Other Resistors	RS1/16SS###J

CAPACITORS

C	1001,1003,1005,1006	VCG1063
C	1002,1007,1010,1011	CKSSYF104Z16
C	1004,1009,1016,1019	CKSRYF105Z10
C	1008,1012,1013,1015	VCG1063
C	1014,1018,1021,1029	CKSSYF104Z16
C	1017,1020,1022,1024	VCG1063
C	1023,1026,1031,1041	CKSRYF105Z10
C	1025,1027,1028,1030	VCG1063
C	1032,1035-1037,1039	CKSSYF104Z16
C	1033,1034,1038,1040	VCG1063
C	1042,1044,1046,1048	VCG1063
C	1043,1045,1049,1050	CKSSYF104Z16
C	1047,1062,1066,1068	CKSRYF105Z10

Mark	No.	Description	Part No.
	C	1051-1053,1055-1058	VCG1063
	C	1054,1064,1070,1082	CKSSYF104Z16
A	C	1061,1063,1065,1067	VCG1063
	C	1069,1071,1081,1084	VCG1063
	C	1072,1083,1301,1403	CKSRYF105Z10
	C	1085,1087,1089,1090	CKSSYF104Z16
	C	1086,1088,1091,1161	VCG1063
	C	1201-1203	CCSSCH180J50
	C	1204,3712,8927	CCSSCH100D50
	C	1209,1211,3823,3824	CCSRCH180J50
	C	1401,1441,2202,2302	VCH1234
	C	1404,3505,4352,4355	CKSRYF104Z50
B	C	1405,1445,1448,2102	CEVLW221M4
	C	1406,1407,1409,1435	CCG1171
	C	1408,3507,5011,5042	VCG1057
	C	1431,4002,7204	VCH1269
	C	1433,1443,1591,1601	CKSRYF105Z10
	C	1434,1444,1592,3506	CCSRCH102J50
	C	1446,1447,1449,2151	CCG1171
	C	1501,1603,1604	CCSRCH101J50
	C	1502	CCSRCH470J50
	C	1607-1610,1653,1654	CCSRCH101J50
C	C	2103,2107,2111,2112	CKSRYF105Z10
	C	2104,2109,2114,2117	CKSSYF104Z16
	C	2105,2106,2108,2110	VCG1063
	C	2113,2115,2205,2206	VCG1063
	C	2116,2203,2207,2211	CKSRYF105Z10
	C	2118,2204,2209,2214	CKSSYF104Z16
	C	2152,2351,2352,2602	CCG1171
	C	2153,2353,3153,4018	CCSRCH101J50
	C	2208,2210,2213,2215	VCG1063
	C	2212,2216,2303,2307	CKSRYF105Z10
D	C	2217,2218,2304,2309	CKSSYF104Z16
	C	2305,2306,2308,2310	VCG1063
	C	2311,2312,2316,2403	CKSRYF105Z10
	C	2313,2315,2405,2406	VCG1063
	C	2314,2317,2318,2404	CKSSYF104Z16
	C	2402,2601,2604,3301	CEVLW221M4
	C	2407,2411,2412,2416	CKSRYF105Z10
	C	2408,2410,2413,2415	VCG1063
	C	2409,2414,2417,2418	CKSSYF104Z16
	C	2603,2607,3104,3109	CKSSYF104Z16
	C	2605,3305,5009,5323	CEVLW101M10
	C	2606,3103,3107,3114	CKSRYF105Z10
	C	2608,3105,3106,3108	VCG1063
E	C	3102,3202,6001,6307	CCH1688
	C	3110,3111,3113,3116	VCG1063
	C	3112,3117,3120,3123	CKSSYF104Z16
	C	3115,3122,3203,3207	CKSRYF105Z10
	C	3118,3119,3121,3205	VCG1063
	C	3124,3204,3209,3212	CKSSYF104Z16
	C	3151,3152,3302,3502	CCG1171
	C	3206,3208,3210,3211	VCG1063
	C	3213,3216,3218,3219	VCG1063
	C	3214,3215,3222,3306	CKSRYF105Z10
	C	3217,3220,3223,3224	CKSSYF104Z16
F	C	3221,3308,3503,4020	VCG1063
	C	3303,3307,4011,4021	CKSSYF104Z16
	C	3304,3702,5002,5006	CEVLW221M4

Mark	No.	Description	Part No.
	C	3501	CEVW221M4
	C	3504,3701,3803,3861	CKSRYF105Z10
	C	3703,3710,3711	CCSRCH102J50
	C	3802,5010,5407,7103	VCH1234
	C	3804,3862,4102,5047	CCG1171
	C	3805-3808,4003,4004	CCSRCH102J50
	C	3821,3822	CCSSCH120J50
	C	4012,4013,4402,4406	CCSRCH102J50
	C	4016	VCG1061
	C	4017,4019	CKSSYF103Z50
	C	4022,4026,5014,5023	VCG1063
	C	4071,4601,5003,5007	CKSRYF105Z10
	C	4101,5321,5322,7422	CKSQYB225K10
	C	4201,4202,4222,4223	CKSSYF104Z16
	C	4221,4356,5303,5313	CCSRCH101J50
	C	4351	CCSRCH681J50
	C	4401,4407,4409,4411	CKSRYF104Z50
	C	4403-4405,8102	CCSRCH220J50
	C	4408,7503	CEVW101M16
	C	4410,4413,4416,5004	CCSRCH102J50
	C	4412,6202,6322	CKSRYF104Z50
	C	4414,5324,7105,7107	CKSRYB105K16
	C	4415	CEVW470M35
	C	5008,5053,5063,5066	CCSRCH102J50
	C	5013,5021,5022,5045	CKSSYF104Z16
	C	5041,5043,5056,5057	VCG1063
	C	5044,5067,5805-5807	VCG1057
	C	5046,5048-5051,5401	CKSSYF104Z16
	C	5052,5062,5065,5301	CCG1171
	C	5054,6304,7304	CEVLW221M4
	C	5302,5311,5312	CCG1171
	C	5402	CKSRYF105Z10
	C	5403,6002,6313,6314	VCG1063
	C	5404,7005,7101,8003	CCSRCH102J50
	C	5405	CCSRCH5R0C50
	C	5409,5414,8926	CCSSCH101J50
	C	5802-5804,5811,6303	CKSSYF104Z16
	C	6003,6004,6006,6007	CCG1205
	C	6011-6017,6302,6305	CCG1171
	C	6111,6121,6131,6141	VCG1057
	C	6151,6161,6327,8006	VCG1057
	C	6201,6203-6206	CEVW102M6R3
	C	6306,6309,6312,6325	CKSSYF104Z16
	C	6308,6311,7102,7104	CCG1171
	C	6315,6317	CKSRYB123K50
	C	6316,6318	CKSRYB154K10
	C	6319,6321,8005,8011	VCG1063
	C	6323,6324	CKSRYB222K50
	C	6328,6329	CCSRCH330J50
	C	7001-7004,7006,7007	CKSRYF104Z50
	C	7008,7201,7301,7421	CEVLW101M10
	C	7106,7313	CCH1688
	C	7202,7203,7302,7303	CCG1171
	C	7205,7334	CKSRYB105K16
	C	7305,7314,7425	CCSRCH101J50
	C	7311,7312,7322,7331	CCG1171
	C	7332,7423,7502	CCG1171
	C	7333,8002	VCH1234
	C	7501	CKSQYB225K10

Mark	No.	Description	Part No.
	C	7601,7603,7651,7653	CKSRYF104Z50
	C	7602,7652,8801,8802	CEVLW470M16
	C	8004,8032,8175,8185	CCSRCH102J50
	C	8012	VCG1057
	C	8031	CKSSYF104Z16
	C	8101	CCSRCH820J50
	C	8104,8901,8903,8905	CKSRYB104K50
	C	8111	VCH1241
	C	8115,8171-8173	CKSRYF104Z50
	C	8117,8922-8924,8932	VCG1063
	C	8174,8184	VCH1267
	C	8181-8183,8803-8805	CKSRYF104Z50
	C	8906,8908	CCSQCH101J50
	C	8907	CKSRYB104K50
	C	8921	CEVLW101M10
	C	8933	VCG1063

ATAB ASSY (BDP2.0) (BDP-05FD)

MISCELLANEOUS

	CN	9001 40P CONNECTOR	VKN1818
	CN	9003 40P ATA CONECTOR	VKN1816

A MAIN ASSY (BDP2.0) (BDP-51FD)

SEMICONDUCTORS

	IC	1001	R8A34019BG
	IC	2101,2201,2301,2401	EDE5108AJBG-6E-E
⚠	IC	2151,2351,3151,5301	S-1170B18UC-OTD
⚠	IC	2601,3301	LP2996M
	IC	3101,3201	EDE5116AJBG-6E-E
	IC	3501	VYW2414
	IC	3551,4351	TC7SH08FUS1
	IC	3801	PDJ015A
	IC	4001	PDC178A8
	IC	4002	BD45282G
⚠	IC	4101,7301,7311	S-1170B33UC-OTS
	IC	4201	BU4809F
	IC	5001	SII9134CTU
⚠	IC	5311	S-L2980A33MC-C6S
⚠	IC	5321	NJM2370U1-05
	IC	5401,8001	ICS571MLF
	IC	6001	NJM2566AV
⚠	IC	7101	TPS74901KTW
⚠	IC	7201	S-1170B18UC-OTD
⚠	IC	7421	S-1170B50UC-OUJ
⚠	IC	7501	S-L2980A50MC-C7J
	IC	8011	TC7WH74FU
	IC	8031	TC74VHC157FTS1
	IC	8101	LMH6658MMX
	Q	4001,4004,5232	2SA1576A
	Q	4002,4003,5202	DTC124EUA
	Q	5201	UMB1N
	Q	5211,5221	UM6K1N
	Q	5231	HN1C03FU
	Q	6501-6505,8181	2SA1576A
	Q	8171	2SC4081
⚠	Q	8801	2SC5712
	Q	8812	UMD2N
	D	4001,4002	1SS355
	D	4351,6001-6004	RB501V-40
	D	8801	UDZS7R5(B)

MISCELLANEOUS

	L	3801,3802,8901 INDUCTOR	CTF1384
	L	4402-4406,4412-4417 INDUCTOR	CTF1306
	L	4407,4408,4410,4411 INDUCTOR	CTF1394
	L	4421,5051,5052,5061 INDUCTOR	CTF1394
	L	5062,5105,6001,6301 INDUCTOR	CTF1394
	L	5106-5109 INDUCTOR	CTF1306
	L	5401 INDUCTOR	CTF1357
	F	1401,1421,1431,2101 EMI FILTER	DTL1106
	F	2301,3101,3201,3501 EMI FILTER	DTL1106
	F	3701,3801 EMI FILTER	DTL1106
	F	4001,5001-5003,8001 EMI FILTER	VTL1171
	F	5007-5010 EMI FILTER	ATF1209
	JA	3701 SDCARD SLOTCONNECTOR	DKP3748
	JA	4351 JACK	RKN1004
	JA	5001 HDMI CONNECTOR	AKP7220
	JA	6001 COMB.JACK(S+1P)	AKB7146
	JA	6002 JACK	VKB1165
	JA	8001 JACK BOARD	VKX1024
	X	3801 CRYSTAL RESONATOR	VSS1226
	X	4001 CERAMIC RESONATOR (12 MHz)	VSS1216
	CN	1501 CONNECTOR	VKN2050
	CN	1601 11P CONNECTOR	RKN1052
	CN	4401 30P CONNECTOR	VKN1620
	CN	7001 CONNECTOR	AKM1284
	CN	7002 CONNECTOR	AKM1282
	CN	8801 CONNECTOR	AKM1273
	CN	8901 27P CONNECTOR	VKN1617
	0	SD MEMORY CARD	VWX1233

RESISTORS

	R	1001-1004,2111,2112	RS1/16SS82R0F
	R	1105,1117,1119	RAB4CQ220J
	R	1111,1115,1183,1623	RS1/16S220J
	R	1122-1124,1176,1177	RAB4CQ220J
	R	1145,1146,1552-1555	RAB4CQ223J
	R	1166,1167	RS1/16SS1500F
	R	1171	RS1/16SS8200F
	R	1172	RS1/16SS1000F
	R	1182,1184-1189,1193	RAB4CQ470J
	R	1194,1211,1213,5026	RAB4CQ470J
	R	1201,1251,2154,2354	RS1/16S0R0J
	R	1214,1238,1252,1253	RAB4CQ103J
	R	1302,1327,1328	RAB4CQ330J
	R	1332,1335	RAB4CQ472J
	R	1401,1441-1445,1591	RS1/10S0R0J
	R	1502-1505,1513	RAB4CQ330J
	R	1601,1602,1605,1606	RS1/16S221J
	R	1610,1611,1622,1651	RS1/16S221J
	R	1652,4351,4353	RS1/16S221J
	R	2211,2212,2311,2312	RS1/16SS82R0F
	R	2411,2412,3111,3112	RS1/16SS82R0F
	R	2615-2619,3303-3308	RAB4CQ220J
	R	2637-2641,3341-3346	RAB4CQ750J
	R	3154,3513,3833,3843	RS1/16S0R0J
	R	3211,3212	RS1/16SS82R0F
	R	3591-3594,3791,3792	RAB4CQ103J
	R	3803,3804,3817,3819	RS1/16S220J

Mark	No.	Description	Part No.
R	3805,3806,4015,4016		RS1/16S103J
R	3814,7501,8001,8206		RS1/16S470J
R	3815,8002		RS1/16S330J
R	4017,4019,5234,5235		RS1/16S472J
R	4024,8813		RS1/16S471J
R	4061,4317,4602,5015		RS1/16S0R0J
R	4063		RAB4CQ223J
R	4071		RS1/16S223J
R	4072,4316		RS1/16S104J
R	4241,4355,7102,7206		RS1/16S103J
R	4352,7301,7311,7421		RS1/16S101J
R	4354		RS1/16S224J
R	4583,4585,4591,4593		RAB4CQ103J
R	5019,5030,5031,5043		RAB4CQ103J
R	5022,5023,5039		RS1/16S220J
R	5033,5034,5057,5211		RS1/16S0R0J
R	5035		RS1/16S180J
R	5036		RS1/16S6800F
R	5041,5044,5045		RAB4CQ220J
R	5049-5052,8004-8006		RS1/16S220J
R	5231		RS1/16S473J
R	5232,8015		RS1/16S102J
R	5233,5237		RS1/16S272J
R	5236		RS1/16S562J
R	5238		RS1/16S472J
R	5321,5401,6003,6006		RS1/16S0R0J
R	5405		RS1/16S22R0F
R	5406		RS1/16S62R0D
R	6001,6007,7101,8181		RS1/16S332J
R	6002,6008,7205		RS1/16S682J
R	6010-6012,7204,8051		RS1/16S0R0J
R	6201-6206		RS1/10S75R0F
R	6211-6216,7321,7601		RS1/10S0R0J
R	6319,6320		RS1/16S392J
R	6501,6505,6509,6513		RS1/16S1000F
R	6517		RS1/16S1000F
R	7103		RS1/16S1201D
R	7104		RS1/16S2701D
R	7105		RS1/16S3300D
R	7603,7651,7653,8112		RS1/10S0R0J
R	8031,8035,8036,8048		RS1/16S220J
R	8101		RN1/16SE2201D
R	8102		RS1/16S101J
R	8103		RN1/16SE6800D
R	8104		RS1/16S331J
R	8105		RS1/16S152J
R	8106		RN1/10SC75R0D
R	8107,8108,8121,8131		RS1/16S0R0J
R	8111		RS1/16S103J
R	8132,8811,8821		RS1/16S0R0J
R	8171,8182		RS1/16S122J
R	8172		RS1/16S222J
R	8815		RS1/16S561J
R	8816,8921		RS1/10S0R0J
R	8901-8903,8924		RS1/16S470J
R	8905-8910		RS1/16S0R0J
	Other Resistors		RS1/16SS###J

CAPACITORS

Mark	No.	Description	Part No.
C	1001,1003,1005,1006		VCG1063
C	1002,1007,1010,1011		CKSSYF104Z16
C	1004,1009,1016,1019		CKSRYF105Z10
C	1008,1012,1013,1015		VCG1063
C	1014,1018,1021,1029		CKSSYF104Z16
C	1017,1020,1022,1024		VCG1063
C	1023,1026,1031,1041		CKSRYF105Z10
C	1025,1027,1028,1030		VCG1063
C	1032,1035-1037,1039		CKSSYF104Z16
C	1033,1034,1038,1040		VCG1063
C	1042,1044,1046,1048		VCG1063
C	1043,1045,1049,1050		CKSSYF104Z16
C	1047,1062,1066,1068		CKSRYF105Z10
C	1051-1053,1055-1058		VCG1063
C	1054,1064,1070,1082		CKSSYF104Z16
C	1061,1063,1065,1067		VCG1063
C	1069,1071,1081,1084		VCG1063
C	1072,1083,1301,1403		CKSRYF105Z10
C	1085,1087,1089,1090		CKSSYF104Z16
C	1086,1088,1091,1161		VCG1063
C	1201-1203		CCSSCH180J50
C	1204,3712,8927		CCSSCH100D50
C	1209,1211,3823,3824		CCSRCH180J50
C	1401,1441,2202,2302		VCH1234
C	1404,3505,4352,4355		CKSRYF104Z50
C	1405,1421,1445,1448		CEVLW221M4
C	1406,1407,1409,1424		CCG1171
C	1408,3507,5011,5042		VCG1057
C	1422,1433,1443,1591		CKSRYF105Z10
C	1423,1434,1444,1592		CCSRCH102J50
C	1431,4002,7204		VCH1269
C	1435,1446,1447,1449		CCG1171
C	1501,1603,1604		CCSRCH101J50
C	1502		CCSRCH470J50
C	1601,2103,2107,2111		CKSRYF105Z10
C	1607-1610,1653,1654		CCSRCH101J50
C	2102,2402,2601,2604		CEVLW221M4
C	2104,2109,2114,2117		CKSSYF104Z16
C	2105,2106,2108,2110		VCG1063
C	2112,2116,2203,2207		CKSRYF105Z10
C	2113,2115,2205,2206		VCG1063
C	2118,2204,2209,2214		CKSSYF104Z16
C	2151,2152,2351,2352		CCG1171
C	2153,2353,3153,4018		CCSRCH101J50
C	2208,2210,2213,2215		VCG1063
C	2211,2212,2216,2303		CKSRYF105Z10
C	2217,2218,2304,2309		CKSSYF104Z16
C	2305,2306,2308,2310		VCG1063
C	2307,2311,2312,2316		CKSRYF105Z10
C	2313,2315,2405,2406		VCG1063
C	2314,2317,2318,2404		CKSSYF104Z16
C	2403,2407,2411,2412		CKSRYF105Z10
C	2408,2410,2413,2415		VCG1063
C	2409,2414,2417,2418		CKSSYF104Z16
C	2416,2606,3103,3107		CKSRYF105Z10
C	2602,3151,3152,3302		CCG1171
C	2603,2607,3104,3109		CKSSYF104Z16
C	2605,3305,5009,5323		CEVLW101M10
C	2608,3105,3106,3108		VCG1063
C	3102,3202,6001,7106		CCH1688

Mark	No.	Description	Part No.
C	3110,3111,3113,3116		VCG1063
C	3112,3117,3120,3123		CKSSYF104Z16
C	3114,3115,3122,3203		CKSRYF105Z10
C	3118,3119,3121,3205		VCG1063
C	3124,3204,3209,3212		CKSSYF104Z16
C	3206,3208,3210,3211		VCG1063
C	3207,3214,3215,3222		CKSRYF105Z10
C	3213,3216,3218,3219		VCG1063
C	3217,3220,3223,3224		CKSSYF104Z16
C	3221,3308,3503,4020		VCG1063
C	3301,3304,3702,5002		CEVLW221M4
C	3303,3307,4011,4021		CKSSYF104Z16
C	3306,3504,3701,3803		CKSRYF105Z10
C	3501		CEVW221M4
C	3502,3804,3862,4102		CCG1171
C	3506,3703,3710,3711		CCSRCH102J50
C	3802,5010,5407,7103		VCH1234
C	3805-3808,4003,4004		CCSRCH102J50
C	3821,3822		CCSSCH120J50
C	3861,4071,4601,5003		CKSRYF105Z10
C	4012,4013,4402,4406		CCSRCH102J50
C	4016		VCG1061
C	4017,4019		CKSSYF103Z50
C	4022,4026,5014,5023		VCG1063
C	4101,5321,5322,7422		CKSQYB225K10
C	4201,4202,4222,4223		CKSSYF104Z16
C	4221,4356,5303,5313		CCSRCH101J50
C	4351		CCSRCH681J50
C	4401,4407,4409,4411		CKSRYF104Z50
C	4403-4405,8102		CCSRCH220J50
C	4408,7503		CEVW101M16
C	4410,4413,4416,5004		CCSRCH102J50
C	4412,6202,7001-7004		CKSRYF104Z50
C	4414,5324,7105,7107		CKSRYB105K16
C	4415		CEVW470M35
C	5006,5054,7304		CEVLW221M4
C	5007,5402		CKSRYF105Z10
C	5008,5053,5063,5066		CCSRCH102J50
C	5013,5021,5022,5045		CKSSYF104Z16
C	5041,5043,5056,5057		VCG1063
C	5044,5067,5805-5807		VCG1057
C	5046,5048-5051,5401		CKSSYF104Z16
C	5047,5052,5062,5065		CCG1171
C	5301,5302,5311,5312		CCG1171
C	5403,6002,8005,8011		VCG1063
C	5404,7005,7101,8003		CCSRCH102J50
C	5405		CCSRCH5R0C50
C	5409,5414,8926		CCSSCH101J50
C	5802-5804,5811,6018		CKSSYF104Z16
C	6003,6004,6006,6007		CCG1205
C	6011-6015,6017,7102		CCG1171
C	6201,6203-6206		CEVW102M6R3
C	6501-6505,8006,8012		VCG1057
C	7006,7007,7601,7603		CKSRYF104Z50
C	7008,7201,7301,7421		CEVLW101M10
C	7104,7202,7203,7302		CCG1171
C	7205		CKSRYB105K16
C	7303,7311,7312,7423		CCG1171
C	7305,7314,7425		CCSRCH101J50
C	7313		CCH1688
C	7501		CKSQYB225K10
C	7502		CCG1171
C	7602,7652,8801,8802		CEVLW470M16
C	7651,7653,8115		CKSRYF104Z50
C	8002		VCH1234
C	8004,8032,8175,8185		CCSRCH102J50
C	8031		CKSSYF104Z16
C	8101		CCSRCH820J50
C	8104,8901,8903,8905		CKSRYB104K50
C	8111		VCH1241
C	8117,8922-8924,8932		VCG1063
C	8171-8173,8181-8183		CKSRYF104Z50
C	8174,8184		VCH1267
C	8803-8805		CKSRYF104Z50
C	8906,8908		CCSQCH101J50
C	8907		CKSRYB104K50
C	8921		CEVLW101M10
C	8933		VCG1063

ATAB ASSY (BDP2.0) (BDP-51FD)

MISCELLANEOUS

CN	9001	40P CONNECTOR	VKN1818
CN	9003	40P ATA CONECTOR	VKN1816

B FLKY ASSY (BDP-05FD)

SEMICONDUCTORS

	IC	1	RPM7140-H4
	IC	2	PDC182A
⚠	Q	1,2	2SA2060
	Q	3-9	DTC124EUA
	D	1	UDZS2R0(B)
	D	2	UDZS3R3(B)
	D	3,4,9	SLR-343VC(NPQ)
	D	5,7	SLR343BC4T(JKLM)
	D	6,8	SLR343WBCT(MNPQ)

MISCELLANEOUS

KN	1	FL HOLDER (FE)	VNF1142
V	1	FLUORESCENT TUBE	VAW1094
S	5	SWITCH	VSG1024
CN	1	30P CONNECTOR	VKN1290
CN	2,3	5P CONNECTOR	VKN1236

RESISTORS

R	6,73,107	CTF1394
R	8,71	RS1/10S123J
R	21,72	RS1/10S822J
R	31,35,42,67	RS1/10S222J
R	37	RS1/4SA0R0J
R	52,53,74-77	RS1/4SA561J
R	55,56,62,63	RS1/10S152J
R	68	RS1/10S222J
R	81-84,89-94	RS1/4SA561J
R	95,96,100,101	RS1/4SA222J
	Other Resistors	RS1/16S###J

CAPACITORS

C	2,12,31,67	CKSRYB105K16
C	3,8,9,11	CKSRYB104K50

Mark	No.	Description	Part No.
	C	6	CEAT101M16
	C	7,13,16,37	CEAL100M50
	C	10,26	CEAL101M16
	C	14,15,21,24	CKSRYB104K50
	C	17,23,33,34	CKSRYB102K50
	C	18	CEJQNP220M25
	C	28	CKSYB105K16
	C	29,35,38,41	CKSRYB104K50
	C	30,47	CKSYB104K25
	C	44,50-52,54	CKSRYB104K50
	C	45,53	CKSRYB102K50
	C	55,66	CKSRYB104K50
	C	59-65	CCSRCH101J50
	C	68	CKSRYB103K50
	C	69,70	CKSQYB106K6R3

B FLKY ASSY (BDP-51FD)

SEMICONDUCTORS

	IC	1	RPM7140-H4
	IC	2	PDC182A
⚠	Q	1,2	2SA2060
	Q	3,4,6,9	DTC124EUA
	D	1	UDZS2R0(B)
	D	2	UDZS3R3(B)
	D	3,4,9	SLR-343VC(NPQ)
	D	10	SLR343BC4T(JKLM)

MISCELLANEOUS

	KN	1 FL HOLDER (FE)	VNF1142
	V	1 FLUORESCENT TUBE	VAW1094
	S	1-7 SWITCH	VSG1024
	CN	1 30P CONNECTOR	VKN1290
	CN	3 5P CONNECTOR	VKN1236

RESISTORS

	R	6,73,107	CTF1394
	R	8,71	RS1/10S123J
	R	21,72	RS1/10S822J
	R	31,35,42,67	RS1/10S222J
	R	37	RS1/4SA0R0J
	R	52,53,74-77	RS1/4SA561J
	R	68	RS1/10S222J
	R	81-84,89-94	RS1/4SA561J
	R	95,96,100,101	RS1/4SA222J
	Other Resistors		RS1/16S###J

CAPACITORS

	C	2,12,31	CKSRYB105K16
	C	3,8,9,11	CKSRYB104K50
	C	6	CEAT101M16
	C	7,13,16,37	CEAL100M50
	C	10,26	CEAL101M16
	C	14,15,21,24	CKSRYB104K50
	C	17,23,33,34	CKSRYB102K50
	C	18	CEJQNP220M25
	C	28	CKSYB105K16
	C	30,47	CKSYB104K25
	C	35,38,50-52	CKSRYB104K50
	C	45,53	CKSRYB102K50
	C	54,55	CKSRYB104K50
	C	59,60,62,65	CCSRCH101J50

C PSWB ASSY

SEMICONDUCTORS

	Q	991	DTC124EUA
	D	991	SLR343BC4T(JKLM)

MISCELLANEOUS

	S	991 SWITCH	VSG1024
	CN	991 5P CONNECTOR	VKN1236

RESISTORS

	All Resistors	RS1/10S###J

CAPACITORS

	C	991	CCSRCH101J50
	C	992,995	CKSRYB104K50
	C	993	CKSRYB105K16
	C	994	CEJQ100M25

D AUJB ASSY (BDP-05FD)

SEMICONDUCTORS

	IC	1-3	TC7SHU04FUS1
⚠	IC	5	NJM78M05FA
	IC	6,7,14,15	WM8740SEDS
	IC	8-13,16-21	NJM5532MD
	Q	1,2,11,12	2SC4081
	Q	3,4,13,14	2SA1576A
	Q	5-10,15-18	2SD2114K
	D	3,4	1SS355

MISCELLANEOUS

	L	1-4 CHIP BEADS	DTF1070
	JA	1,2 JACK	VKB1160
	JA	3 JACK	VKB1129
	JA	4 JACK	VKB1138
	KN	3,4 SCREW PLATE	VNE1948
	CN	1 27P CONNECTOR	VKN1617

RESISTORS

	R	1,2,23-25	RS1/16S470J
	R	3	RS1/16S101J
	R	4,5,10-12	RS1/10S0R0J
	R	15,28,29	RS1/16S0R0J
	R	54-61,160-167	RS1/16S1002D
	R	62,63,168,169	RS1/16S472J
	R	64-79,170-185	RS1/16S4300D
	R	80-83	RS1/16S0R0J
	R	84,85,186,187	RS1/16S332J
	R	86-89,188-191	RS1/16S6800D
	R	90-97,192-199	RS1/16S1500D
	R	98,99,200,201	RS1/16S103J
	R	100-107,202-209	RN1/16SE1301D
	R	108-115,210-217	RN1/16SE1001D
	Other Resistors		RS1/16SS###J

CAPACITORS

	C	5,9,15-18	CKSRYB104K50
	C	6,10,137,138	CEHAZL101M25
	C	7,8,23,40	CEHAZA101M16
	C	11-13,55,56	CKSSYB102K50
	C	14,30-33	CKSSYB103K16
	C	21	CEHAZL471M16

Mark	No.	Description	Part No.
C	26,27,123,124		VCH1249
C	28,29,34,37		CKSRYB104K50
C	35,38,132,135		CKSSYB331K50
C	41		CEHAZA101M16
C	42		CEAT470M16
C	43-48,51,52		CKSRYB104K50
C	49,50,53,54		CEHAZL100M50
C	57-64,153-160		CEAT100M50
C	65-80,161-176		VCE1053
C	89-96,109-112		VCH1247
C	97-104,193-200		CCSSCH220J50
C	113-116,209-212		CEANP470M25
C	125,126,131,134		CKSRYB104K50
C	127-130		CKSSYB103K16
C	139-144,147,148		CKSRYB104K50
C	145,146,149,150		CEHAZL100M50
C	151,152,220		CKSSYB102K50
C	185-192,205-208		VCH1247
C	221		CKSRYB105K16

D AUJB ASSY (BDP-51FD)

SEMICONDUCTORS

	IC	1-3	TC7SHU04FUS1
⚠	IC	5	NJM78M05FA
	IC	6,7,14,15	WM8740SEDS
	IC	8-13,16-21	NJM5532MD
	Q	1,2,11,12	2SC4081
	Q	3,4,13,14	2SA1576A
	Q	5-10,15-18	2SD2114K
	D	3,4	1SS355

MISCELLANEOUS

	L	1-4 CHIP BEADS	DTF1070
	JA	1,2 JACK	VKB1159
	JA	3 JACK	VKB1130
	JA	4 JACK	VKB1265
	KN	3,4 SCREW PLATE	VNE1948
	CN	1 27P CONNECTOR	VKN1617

RESISTORS

	R	1,2,23-25	RS1/16S470J
	R	3	RS1/16S101J
	R	4,5,10-12	RS1/10S0R0J
	R	15,28,29	RS1/16S0R0J
	R	54-61,160-167	RS1/16S1002D
	R	62,63,168,169	RS1/16S472J
	R	64-79,170-185	RS1/16S4300D
	R	80-83	RS1/16S0R0J
	R	84,85,186,187	RS1/16S332J
	R	86-89,188-191	RS1/16S6800D
	R	90-97,192-199	RS1/16S1500D
	R	98,99,200,201	RS1/16S103J
	R	100-107,202-209	RN1/16SE1301D
	R	108-115,210-217	RN1/16SE1001D
	Other Resistors		RS1/16SS###J

CAPACITORS

	C	5,9,15-18	CKSRYB104K50
	C	6,10,137,138	CEHAZL101M25
	C	7,8,23,40	CEHAZA101M16
	C	11-13,55,56	CKSSYB102K50
	C	14,30-33	CKSSYB103K16

Mark	No.	Description	Part No.
C	21		CEHAZL471M16
C	26,27,123,124		VCH1249
C	28,29,34,37		CKSRYB104K50
C	35,38,132,135		CKSSYB331K50
C	41		CEHAZA101M16
C	42		CEAT470M16
C	43-48,51,52		CKSRYB104K50
C	49,50,53,54		CEHAZL100M50
C	57-64,153-160		CEAT100M50
C	65-80,161-176		VCE1053
C	89-96,109-112		VCH1247
C	97-104,193-200		CCSSCH220J50
C	113-116,209-212		CEANP470M25
C	125,126,131,134		CKSRYB104K50
C	127-130		CKSSYB103K16
C	139-144,147,148		CKSRYB104K50
C	145,146,149,150		CEHAZL100M50
C	151,152,220		CKSSYB102K50
C	185-192,205-208		VCH1247
C	221		CKSRYB105K16

F CAPK ASSY (BDP-05FD Only)

MISCELLANEOUS

CN	1,2	5P CONNECTOR	VKN1374

RESISTORS

All Resistors		RS1/16SS###J

CAPACITORS

C	1	CKSSYB272K50
C	2,4-6	CKSSYB104K16
C	3	CKSSYB105K6R3

G SYPS ASSY

SYPS ASSY has no service part.